Gulstonian Lectures
ON THE
NATURE OF FEVER.

Delivered at the Royal College of Physicians,

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LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—I have at the outset to acknowledge the goodwill of our much-esteemed President, which led him to invite me, one of the four junior Fellows of the College, to assume the exacting office of Gulstonian lecturer. The distinction of the audience to be addressed, and the high standard of excellence upheld by previous lecturers, make the office exacting indeed. Had I not understood that the invitation to undertake it had in it something Royal, and was almost a command, I would have shrunk from inflicting my crude reflections and my profound inexperience on your practised ears. But when I considered that you would probably not look for maturity or experience from one who is literally a junior Fellow in every sense, when I was assured that your tolerance of youthful effort was large and kindly, I took heart and ventured to announce this course of lectures. Fortunately for me, a wide latitude in the choice of a subject and in the manner of treating it has hitherto been permitted. My term of practice has been far too short to enable me to offer you any generalisation based on extensive clinical work or on ripe knowledge of human nature, such as has in late years delighted and instructed you. My aim must perforce be humbler. I must be content with attempting to coördinate certain recent advances in our knowledge concerning a department of pure pathology, and with suggesting to you certain lines along which it is possible that further advances may be made.

My subject is the Nature of Fever, and though I did not choose it light-heartedly, it was only when I came to set down my ideas upon it that I fully appreciated all its difficulty. Still, inasmuch as for the last five or six years it has never been long absent from my thoughts, and as its problems, physical and physiological, have constantly exercised me, I may be pardoned if I venture to discourse on a subject in one aspect so familiar and fundamental, in another aspect so little understood. Our knowledge of the clinical aspect of fever is now singularly full. I can add little or nothing on this side. But that the intimate nature of the febrile process—its morbid physiology, so to speak—is not understood, we have sufficient evidence in the diverse and contradictory explanations offered in our medical text-books. From time to time, and chiefly at present from the Continent, we are receiving fragmentary solutions of some of the outstanding questions that present themselves to the investigator of fever. These often come from workers who have no thought of the pathological problem they are unwittingly helping to solve. They appear under various guises and in many journals. The busy physician cannot hope to notice them all, or to recognise their bearing on his needs. He may therefore welcome an attempt to bring together their results, which are apt to be buried under a mass of experimental detail, and to appraise their value as contributions to the general subject. My literary work for some years has obliged me to survey much of recent pathological literature, and it is on that ground only that I can hope to offer you some matters for consideration that are perhaps not known to all. That much of what I have to say is already familiar to some of my audience is certain. If I say it notwithstanding, it is because I wish to be clear and complete rather than original.

In the first place it is necessary to state what I mean by *fever*. I need hardly say that I do not refer to the specific infective diseases grouped together as the "eruptive" or "continued" fevers. I speak of the condition of feverishness or pyrexia which is common to these diseases and to many others—the disordered inward condition of the body heat, whose frequent and most manifest outward sign is high temperature. It is of course true that the term "fever" conveys to our mind a more complex notion—it implies, in general, disorder of the circulation and the respiration, of secretion and digestion, of the nervous system and the muscular system, as well as of the body heat. But without saying, as some *have* said, that all the other disorders of function which we describe as febrile are merely consequences of the disorder of temperature, I shall not be going too far if I state at the outset that the *essential* fact in fever—the condition which is always present whether other of its symptoms are present or absent—is disorder of the body heat. In using the word "essential" rather than "primary," I wish to avoid the pre-judgment suggested by the latter. Other conditions may precede in time or in causation the essential symptom of disordered heat, and according to the confidence or the refinement of our analysis we may term one or another of them primary, but not until the essential symptom is present have we to do with fever. We have a like state of things in the case of *inflammation*. The single word covers a whole series of processes; each process is a complex of many elements. It implies changes textural and changes vascular, changes nervous and changes mechanical. And in the gradual development of pathological knowledge now one and now another of these has been regarded as *primary*. But to-day we are justified in holding, for the reasons so admirably set forth by your Lumleian lecturer in 1882, that alteration or damage of the minuter bloodvessels is the *essential* condition, without which there is no inflammation.

Disorder of the body heat, then, is the essential condition of fever. To understand the nature of fever we must examine the nature of this disorder. But first it is necessary to consider the natural ordering of the body heat, the healthy function of which pyrexia is a disturbance. The constancy of the temperature of the body in health, under widely varying internal and external conditions, is a fact so familiar that we have ceased to wonder at it. Yet it rests on a perpetual balance of opposing tendencies which is as mysterious and as beautiful as anything in our frame. As a mere question of physics, the maintenance of a constant temperature by a body plunged in a cooler and variable medium like the air involves three coöperant factors. There must be a source whence heat is produced, whether at a uniform or at a variable rate. There must be processes by which heat is discharged from the body or transformed within it. There must be a mechanism by which the heat production and the heat loss are balanced at the normal height. This mechanism must be in relation on the one hand with the processes of heat production, and on the other hand with those of heat loss. And its relations with these must be so intimate that within limits the balance it maintains shall be not only steady, but *stable*. In other words, small deviations from the normal temperature in either direction must call into play thermal tendencies whose resultant is back towards the normal. Increased loss must be promptly compensated by increased production, and increased production met by increased loss. This *stability* is to be distinguished from the property of mere steadiness or constancy, though, of course, the two are connected. In health, as we all know, there are daily fluctuations of a regular kind, and these must be borne in mind when we speak of the temperature of the body as constant. The constancy, so far, is imperfect. But in health the stability of the temperature is nearly perfect. A very short time suffices to overcome the disturbance produced by change in the external thermal conditions. And in like manner the consumption of a large amount of physiological fuel (i.e., food), and the internal production of heat thereby originated, has only a transient influence on the surface temperature. If we may use Greek terms, we might say that man, with other "warm-blooded" animals, is not only *homœothermic*, but *thermostatic*. We shall have occasion to refer to this distinction when we come to consider a theory of fever which has found some acceptance among us.

The mechanism which regulates the body temperature and gives it stability, as the governor of a steam-engine regulates the speed, we speak of briefly as the thermotaxic mechanism. When we reflect on the promptness of its action, on its sensitiveness, on the amount and variety of the substance whose thermal variations it has to control and adjust, we cannot resist the conviction that the mechanism is nervous. And

as we go on we shall find numerous reasons in support of this conviction. It is when we come to consider the exact nature of this thermotaxic nervous mechanism that difficulties arise. Where is the seat of the coördinating power? Is its action direct or indirect? Does it control temperature chiefly by varying heat production, as when we raise or lower the flame of a gas stove or the damper of a furnace flue? or by varying the heat loss, as when we open or close the window of a heated room? These are questions of physiology, but their solution is in a sense the solution of the problems of fever; and no fruitful discussion of *its* pathology can take place if they are not carefully dealt with, and their scope at least understood.

It is clear that, given a steady and fairly uniform production of heat, regulation might to some extent be effected by a mechanism controlling only the loss of heat from the body. It is as clear that, given a steady rate of heat loss, a mechanism controlling the production of heat would also suffice to regulate the temperature. But we have abundant reason for believing that neither the production of heat nor the loss of it is even approximately steady in healthy active life, and therefore for believing that both these controlling mechanisms are necessary and in fact exist. The thermotaxic mechanism is, in Dr. Hughlings Jackson's sense, "higher" than either of them. It governs them both; it adjusts their mutual relations. It is later in attaining its full development, and it is more liable to fail under injury or disease. We shall see that the mechanism controlling heat production comes next in functional order, while that controlling heat loss is lowest of the three. Now, it happens not unnaturally that our knowledge of these mechanisms is least as regards the highest and greatest as regards the lowest; and as each has its special bearings on the process of fever, I shall subdivide my discourse into three parts having reference (1) to heat loss, (2) to heat production, and (3) to the thermotaxic nervous mechanism. I shall thus proceed from the better known to the less, in the hope that in passing from the certain to the probable and thence to the possible I may not wholly fail in carrying you with me.

First, then, as to heat loss and its relations to the process of fever. The main channels by which heat passes out of the body to its environment are of course the skin and the lungs. Through the skin in health by evaporation, conduction, and radiation there escapes more than 80 per cent. of all the heat discharged. In warming and moistening the breath less (perhaps much less) than 20 per cent. escapes. The rate of loss is varied, as we know, by alterations in the vascularity of the skin and in the period and amplitude of the respirations. A face flushed with wine feels warm, for it is rapidly discharging heat; a dog, whose skin lets little heat pass through, pants to cool itself. Experiment and observation have established the existence in the brain and spinal cord of vaso-motor "centres" that control the blood-supply of the integuments by varying the calibre of the arteries. The efferent nerves that pass from these centres to the vessel walls are of two kinds: the one vaso-constrictor, or, as we may say, motor; the other vaso-dilator, or inhibitory. The "centres," whatever meaning be given to the term, must themselves have something corresponding to this twofold differentiation. In like manner the rate of respiration is governed by a nervous mechanism, consisting of centres in the medulla and cord, with a twofold complement of nerves proceeding to the respiratory muscles. There are strong grounds for regarding these nerves also as respectively motor and inhibitory, and the respiratory centre as consisting of two correlated parts, one subserving inspiration, the other checking inspiratory movement and subserving expiration. The channels of heat dissipation are thus admittedly under the control of nervous mechanisms, twofold or double-acting mechanisms we might say, each having a motor and an inhibitory aspect. Moreover, these mechanisms are known to be susceptible to rise of temperature, reacting thereto in such a way that the resulting vascular and respiratory changes increase the discharge of heat from the body. Attracted by the apparent simplicity of these arrangements for the governance of heat loss, it is not wonderful that Traube should have sought to base on them a theory of thermotaxis, and of that derangement of thermotaxis whose manifestation is pyrexia. "In health," he would say, "the temperature of the body is maintained by the vigilant action of the sensitive nerve centres that control the great systemic functions of circulation and respiration. Fever is due primarily to a disorder of these centres, by which the normal rate of discharge is diminished heat is thus pent up within the tissues, and their temperature rises by 'retention.' This general rise of temperature then reacts on the organs to their hurt, and the disorders of secretion and nutrition, which we know as febrile, naturally follow." No explanation could well have been more simple, and it was applied with much skill to account in a natural way for many of the clinical features of pyrexia. Irritation of the vaso-motor centres by injury or poison led to prompt and abiding spasm of the arterioles of the skin. When the centres were very irritable or the irritant intense, the resulting rise of temperature was rapid. The sudden difference thus caused between the temperature of the peripheral ischæmic parts and that of the central parts acted as a powerful sensory stimulus, and this by a reflex action set up a powerful motor disturbance—the initial *rigor*. When the spasm of the arterioles suddenly relaxed, a gush of heat took place from the fevered body, and its temperature fell by *crisis*; when the spasm yielded gradually and with intermissions, we had a *lysis*. It is not wonderful, I say, that observers like Traube and Marey, whose labours on the mechanism of circulation and respiration had been so great and so fruitful, should favour this "retention theory." It rested on their own work, it involved only mechanisms with which they were intimately acquainted, it was apparently capable of wide application to clinical facts, and it was partially true. And so long as certain other facts were unknown or ignored, the theory certainly satisfied many acute observers, and even now appears in some of our medical text-books as the last word of physiological pathology.

Let us consider, then, the *retention theory* of Traube, and examine wherein it fails. "Pyrexia is due to a diminished discharge of heat from the surface of the body, and this to a powerful contraction of the arterioles of the skin." It is plain that the structure rests on the one fundamental assumption—namely, that the escape of heat from the body is unduly small. If that assumption is itself unfounded, we have no choice but to conclude that, though retention may be a *vera causa* of fever, it is not the essential cause. Twenty years ago experiments were made to test the assumption. Inasmuch as the question is one of quantities of heat and not of temperature only, it was clear from the outset that the test must be calorimetrical, not thermometrical. In other words, the heat passing from the fevered body must be measured by the mass of water (say) it is capable of warming to a measured extent. This quantity of heat must then be compared with that given out by the normal body under like conditions. The first attempts, made by Liebermeister and others, were open to objections of many kinds, physical as well as physiological. Professor Burdon Sanderson has subjected some of them to criticism, sometimes more severe than they quite deserve, in his excellent memoir on the "Process of Fever," published as a Government paper in 1875. Thus Liebermeister placed a fevered patient in a tepid bath, and noted the amount by which the water was heated in a given time. But the experiment was vitiated as a quantitative test by the changed physiological conditions the contact of the water might cause in the patient's body, and by the fact that the powerful heat-discharging process of evaporation was interfered with. Leyden and Senator, with greater precautions, measured the heat discharge from fevered limbs and from fevered animals. In the case of the latter, means were found for estimating the quantity of carbonic acid and the quantity of watery vapour exhaled in a given time. Pains were taken to compare the results with those yielded by a normal animal under like conditions as regards food. The net result was to show that both in the human patient and in the fevered animal pyrexia was accompanied not by *diminished* but by *increased* discharge of heat. Senator, indeed, goes so far as to estimate the average increase of heat loss in some cases of septicæmic pyrexia at something like 75 per cent. The objections that have been raised to the methods employed touch, as I have hinted, rather the quantitative than the qualitative value of these calorimetric tests. The latter is not at all ambiguous: the increased discharge of heat was unmistakable. Like experiments have been repeated in recent years by Wood of Philadelphia, and by Reichert and Hare under his direction. Their arrangements were admirably designed, the criticisms of 1875 were considered and met, and the work bears every mark of honesty and care. From a physical point of view there seems nothing to which objection can be taken; and the outcome of the last measurements, published only the other day, is the same as that of the older and less perfect

ones of fifteen years ago. It is that heat is *not* abnormally retained in the body during fever; on the contrary, it is excessively discharged: and this is true not of one stage only; it holds for the rise and for the continuance of the fever, as well as for its fall.

This foundation of the retention theory being done away, the theory falls to the ground as an adequate explanation. But we may further ask—Is it indeed a fact that during fever there is an abiding spasm or tetanus of the arterioles of the skin? This question has been minutely investigated, and though the answer is decidedly in the negative, the research has added largely to our understanding of some of the phenomena of fever. Clinical observation prepares us to believe that the cutaneous circulation may vary greatly during the same febrile attack. At one time the skin is pale and dry, at another flushed, at another bathed in perspiration. Direct observation of the vessels, say in the ear of a fevered rabbit, shows that their calibre is constantly altering in a way that is quite different from the quasi-rhythmical contraction and dilatation of health. These changes become irregular and excessive, so that the surface is within an hour or two pale and cool, then intensely hot and hyperæmic, and then pale once more, the body temperature remaining all the while at a febrile height. Less direct, but perhaps not less convincing, is the evidence afforded by the surface temperature. Whatever spot of the skin we choose, and in whatever variety of fever, we find that the surface temperature fluctuates from hour to hour in a remarkable manner, the curve representing its changes having little or nothing in common with the rectal temperature. Of this my own observations have repeatedly convinced me.

From all these facts, and I have only touched on them in the most general way, we gather that in fever the cutaneous vessels are *not* in a state of continuous contraction. The cutaneous blood-supply, on the contrary, fluctuates in an irregular manner: now flushing the surface tissues, raising their temperature, and pouring out heat into the air; now reduced to a minimum, leaving the skin pale and dry, and shutting in the heat of the central parts. All this, of course, betokens that the nervous mechanism which controls the cutaneous discharge of heat is notably disordered. There is, indeed, no constant stimulation of the vaso-constrictor nerves such as Traube imagined; there is no continuous retention of heat, but there are marked irregularities in the rate at which it is discharged. These irregularities have doubtless much to do with determining the type of the febrile temperature, the configuration of the charts, in various diseases. But they leave out-standing and unexplained the two cardinal facts—first, that the febrile discharge of heat is greater than the normal discharge, and, second, that notwithstanding this greater loss the temperature so often rises and remains high. One possibility only remains—namely, that the production of heat within the body is abnormally increased.

The next question that suggests itself is this—Is the heat production steady, or is it fluctuating? We have seen that the heat loss, as gauged by the condition of the surface, is subject to wide and irregular variations, not merely from day to day during the course of the fever, but even from hour to hour in the same day. Is there any similar irregularity in the rate of heat production? To answer this question we must again fall back on calorimetry. Thermometrical observations are of no service. The daily balance at my banker's tells me nothing of the variations in my receipts. It depends on out-goings as well as in-comings. The temperature of the body is merely a function of the difference between heat income and heat expenditure at any moment. Now, we cannot well shut up a fever patient in a calorimeter for hours or days together, so our direct knowledge of variations in human heat production during fever is of the slightest. We must have recourse to experiments on animals. The only recent investigations which have been conducted with a view to directly answering our question are those of Wood and his assistants. An examination of their numerical results shows that in the septicæmic fever of dogs and rabbits the hourly rate of heat-production does vary in a remarkable way, even under uniform conditions as to feeding or fasting. The variation shows in some animals a tendency to rhythm, being usually higher towards the evening. Feeding introduces a marked increase of heat-production in the normal animal, and the increase is not absent in fever. Further experiments are to be desired, but of the mere fact of fluctuation in heat production there seems no doubt. Some of the figures, morever, show that, as the course of the temperature varies, the rate of heat production may actually be highest when the temperature is lowest: an excessive rate of heat loss may overbear and so disguise a simultaneous excessive rate of heat production. And, conversely, the time when the temperature is high may coincide with a time when the heat production is low. The inference from this is very important—namely, that the height of the temperature in fever is in great measure dependent on the momentary relation of the two processes of heat production and heat loss. And inasmuch as these two processes tend to vary irregularly, with but a weak *nisus* towards a daily rhythm, the fluctuations of the temperature do not afford an accurate measure of the changes in either process. The daily and hourly variations in febrile temperature are wider and more irregular than those in health: febrile temperature is *inconstant*. Moreover, trifling changes in the surroundings of the patient or in his functions readily send his temperature up or down: febrile temperature is *unstable*. The two coöperant factors of the temperature are acting more or less independently: thermotaxis is enfeebled or overpowered.

Dr. Hilton Fagge (whose name I mention with sincere and affectionate respect) has in his classical treatise on Medicine befriended, or rather perhaps adopted, a suggestion of Liebermeister's which requires some comment in this connexion. The wide acceptance among English students which any theory so endorsed is sure to gain makes me anxious that it should not pass without some critical examination. Liebermeister takes up the position that "pyrexia consists, not in a mere rise of the temperature of the body, still less in increase of heat generation, or in diminution of loss of heat, but in a change in the normal function of heat regulation by which the production of heat and its loss are so balanced as to create and maintain, while the pyrexia lasts, a higher temperature instead of the normal temperature. One might imagine the index of the regulating machinery to be shifted upwards, so that it is 'set,' not at 98·4°, but at 101°, 102°, 103°, or even at a still higher point."

The first objection I have to raise is that, if regulation means anything, it means, as I have already indicated, not merely an average uniformity of temperature persisting for any short period of time. Such a uniformity only implies that for a time the average losses of heat by all channels balance the average gains from all sources. So far as we know, it may be a fortuitous equation between two independently varying quantities. Regulation implies more than this—very much more. It implies *stability;* it implies such an intimate correlation of the producing process to the discharging process that their variations are not independent, but connected and concurrent; it implies a *nisus* towards a normal which is potent to overcome disturbing causes. We may know that a system of forces is in *equilibrium* when they keep a body at rest, but this rest is no evidence that the equilibrium is *stable*. To determine that we must disturb the body and note its behaviour. If it always returns to rest again, it has not merely equilibrium, it has stability. But, as I have just said, febrile temperature, even when it is at its height and oscillating with fair steadiness about a mean level, is marked by its instability. A trifle that in health would have but a vanishing effect will in fever produce a large and enduring variation. A whiff of cold air, a little food, a passing excitement, a feeble muscular effort, will send up or send down the temperature. The thermostatic character of the healthy normal is conspicuously absent in the mean high level of fever. The imperfect daily rhythm of temperature observed in some continued fevers is no evidence of true regulation. We have seen that even the fluctuating heat production of a fevered animal showed signs of a periodicity. In health this rhythm is deep-seated, and singularly persistent in spite of the most various disturbances. That it should to some extent 'show through' the irregularities of the fever heat is not wonderful: it merely proves that not all the thermal processes are utterly perverted in pyrexia; some that are normally rhythmic may be rhythmic still. But regulation has to do with balancing the integral sum of all the processes, and it is that balance which is overthrown, or at least rendered tottering, in fever. Liebermeister would seem, in fact, to have for the moment fixed his attention too closely on the characters of the *temperature curve* during the *fastigium* of some particular fever; and to explain its apparent average constancy threw out a sugges-

tion which has fascinated others more than himself. The cases given in support of his view are, I think, special, and admit of other interpretations. And he has admitted that its application to clinical and pathological facts must be limited and qualified. Dr. Hilton Fagge puts it forward as sufficient for all purposes, with an absoluteness which Liebermeister himself would hardly admit. According to Dr. Fagge, in fever nothing is changed; the norm of temperature is merely re-set. As Cohnheim puts it, the thermal mechanism of the man is of a sudden transformed into that of a bird. How is the transformation effected?—by what agents, acting on what mechanism? What determines the new fixed point of regulation? Is it fixed at all, or only sliding? How is it ever re-fixed? All these questions follow on the back of Liebermeister's explanation, and the worst of them is that they are not merely unanswered but unanswerable. One cannot conceive a physical or physiological method by which they might be attacked. This, as I understand, is what Cohnheim means when he says the theory has "ein gewisser mystischer Beigeschmack," and, in spite of Dr. Fagge's gentle protest, I confess I think the epithet not unjust.

The risk of laying too much stress on the high temperature of the body, and of regarding it *per se* as an index of the heat production, is, I think, further exemplified in a recent address by Dr. Ord to the Medical Society (Oct. 1885). Let me remind you of his words; they are admirably chosen and state the formal difficulty with great force: "The increased heat of the body in fever is to me a very constant stimulant of thought. When I ask people how it comes about, I am generally told that it is simply a matter of increase of combustion; that the oxidation processes of the body go on with undue vigour in fever; that the system is burning its candle at both ends, and that the two flames give more heat than one. When one looks at a patient who has passed through a febrile illness, one is ready to accept the explanation. He may have had no wasting discharge, hæmorrhage, or other obvious drain, yet there he lies, bloodless and emaciated to a degree which leads one readily to believe that on his bed of fever he has been consumed in all his tissues by an unseen fire.....But for some years my acceptance of this ready and most plausible way of accounting for the phenomenon has been hindered by an attentive consideration of an article on the 'Process of Fever,' contributed by Dr. Burdon Sanderson to the Reports of the Medical Officer of the Privy Council for the year 1875. The article contains an exhaustive notice of the best observations made up to that time with reference to heat production in the body during pyrexia..... I refrain from recapitulating the complex and very refined data upon which Dr. Burdon Sanderson sums up impressively. Suffice it to say that, after careful analysis of this data, he writes thus: 'The general conclusion to which the preceding calculation leads us is a very important one—namely, that although as compared with the heat production of a normal individual on fever diet the heat production of a fevered person is excessive, it is not by any means greater than the heat production of health.' There is in fever, it must be admitted, increased exhalation of carbonic acid and increased excretion of urea, *but after calculation they do not represent a source of heat sufficient to cause the increased temperature of the body.* I have read the article again and again, I have referred to various authorities on the subject, and I am compelled to say that the increased combustion explanation which satisfied me before has no longer the same value. To what, then, as I felt obliged to lose faith in my first belief, should I turn? Might, as some have argued, the increase of heat in the body be brought about by retention, by some state of the surface which would prevent the liberation of heat from the body and lead to accumulation within? The well-conducted observations of Leyden and Liebermeister tend to show that, far from being retained, heat is discharged from the surface in larger quantities in fever than in health. And we all know that intense hyperpyrexia constantly coexists with profuse sweating, involving the freest discharge of heat from the surface of the body, as in severe cases of acute rheumatism. If we are bound to deny the cogency of the two explanations, we are compelled to find a new one." Dr. Ord then goes on to suggest what I may call a new *vera causa*—that is, a possible coöperant cause for the liberation of heat in fever,—about which I shall have something to say later on. My object in making this long quotation has been to show that, while he fully appreciates and admirably states the experimental facts concerning fever which I have already touched on in this lecture (the failure of the retention theory, the increased discharge of heat, the increased production therein inevitably implied—nay more, the indefeasible evidence of increased "combustion" furnished by the increased products of combustion—namely, carbonic acid and urea), he is stumbled by finding that they "do not represent a source of heat sufficient to cause the increased temperature of the body." I venture to suggest that the difficulty is an unreal one. Dr. Burdon Sanderson everywhere distinguishes most carefully between thermogenesis and temperature. He even says there is "the strongest possible evidence that increased or diminished temperature has no necessary connexion with increased or diminished production of heat." "A source of heat sufficient to cause the increased temperature of the body" would be a phrase which Dr. Burdon Sanderson would hardly recognise as his own; and if we give it the meaning it was probably intended to convey—that the increased production of heat in fever is not accounted for by the increased combustion of the tissues as evidenced by the excreted matters—I can only say that I find nothing in the paper referred to that supports such a statement, and I do not know of any measurements which suggest it. There is high temperature in fever, and there is increased production, but the one is not the measure of the other. There is increased heat production in fever as compared with the heat production of health *on the same diet*, but not necessarily as compared with that *on full diet*. Somewhere between these two propositions comes Dr. Ord's, and I am afraid that between them it comes to the ground. I shall be glad if a re-examination of the premisses convinces him that he need not lose faith in his first belief. Dr. Sanderson's memoir, taken in conjunction with Professor Wood's, which supplements and corrects it, when properly weighed, will show him that his first belief is true, though perhaps not the whole truth. And as a final satisfaction I may add that, even though the preamble of his address is unproved, though the discontent with the existing theory which acted as a stimulus to his research was not well founded, the happy suggestion to which it led him appears to me to be true notwithstanding, in a certain guarded and limited sense.

Let me now recur to the outcome of Dr. Burdon Sanderson's analysis above referred to, because in speaking of the experimental evidence of increased heat production in fever I made no allusion to his results. On the surface they appear to tell against that evidence, but properly considered they are not inconsistent with it. When we say that more heat is produced by a patient in fever than by a patient in health, we must add the proviso—*in like circumstances*. One of the most important of these circumstances is diet. I being in health can, by eating to excess, raise my rate of heat discharge far above my usual rate, and I can lower the rate by fasting and still remain in health. If I become fevered I eat less and less, but my rate of heat discharge does not fall accordingly. In the report already mentioned, Dr. Sanderson, from the data before him, finds that the heat production of a fevered patient might be about 50 per cent. higher than in the same patient in health on a low diet. And if that is the case, some "increased combustion explanation" is not only satisfying but inevitable. Admitting increased heat discharge, increased exhalation of carbonic acid, increased excretion of urea, we must admit a source whence they are derived. They cannot come from the food consumed, for that is notably reduced in quantity; they can only come from the body substance itself; there *must* be increased combustion—the tissues *must* be "consumed by an unseen fire." But, to go further, there are not wanting grounds for believing that fever heat is often greater than normal heat even on a full diet. The Philadelphia experiments, made since Dr. Sanderson's paper was written, enable us to follow the thermal history of an animal for several successive days under varying conditions of diet and in varying degrees of pyrexia. The outcome is that in dogs and rabbits at least the fundamental part of the febrile process is an increase in heat production "by chemical movements in the accumulated material of the organism." And though, to use Professor Wood's expression, this increase was usually insufficient "to overplus the loss of production from abstinence from food," in some cases it was more than sufficient. Moreover, reasons are given—valid reasons, as I think—for surmising that what is occasional in the lower animals is probably common in man, in whom febrile movement is more pronounced and severe. In other words, it is

probable that in the fevered man there is sometimes an absolute, and not merely a relative, increase of heat production.

Allow me, in conclusion, to suggest an image; it is not perfect; it is far from being an argument; it is only an illustration of one aspect of the question before us. Some of us, in travelling by railway or by steamer, have been startled by the sudden stoppage of the engine. On inquiry we are told that the "bearings have heated," and we have perforce to be patient till they are cooled down. The normal temperature of the engine is dependent on the consumption of the fuel in its furnace, and when it is in good order its parts work together with but little wear and tear. But from unequal stress, or excessive speed, or defective lubrication, the friction at some bearing point increases, and soon the bearing becomes an abnormal source of heat, useless to the engine as a motive power and fraught with danger to its structure, for it means increased wear of the working parts, deterioration of their temper and their strength, and, as the heat mounts high, actual consumption and oxidation of their substance. The hot bearing is in a state of fever, its heat is wasted, and it is wasting. The warmth, the carbonic acid, the urea of health are evidence of so much food-fuel usefully transformed; the excessive heat and the excessive waste products of fever are evidence that the fabric itself is being wastefully consumed.

Lectures
ON THE
SURGICAL TREATMENT OF PULMONARY CAVITIES.

Delivered at the Consumption Hospital, Brompton,

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LECTURE I.

(*Concluded from page 459.*)

I NOW propose to give in some little detail the notes of some of the cases of pulmonary abscess which I have treated, and thus endeavour to illustrate the chief facts with regard to the various classes, only premising that, as in many other thoracic complaints where recovery takes place, a certain amount of uncertainty may occasionally remain as to the diagnosis; but before taking up the subject of gangrenous cavities I must refer to a very interesting paper by Dr. Coupland,[1] the text for which was a case of gangrene of the lung, following the bursting of a suppurating lymphatic gland situated near the bifurcation of the trachea. Surgeons are well acquainted with the condition of lung which was thus set up; it often follows cut throat or such operations as excision of the jaw or amputation of the tongue, where, if proper care be not taken, the discharges are highly septic and expectoration is difficult; it is one in which patches of pneumonia, started by the presence of putrid pus in the bronchi, are by the same cause converted into fetid gangrenous cavities. It is a condition of things which, as was pointed out by the late Dr. Pearson Irvine, often follows the pressure of an aneurysm or other tumour upon a bronchus, for a precisely similar reason. In the case in question an attempt to reach what was hoped to be the main gangrenous patch, but turned out to be only one of many, led to the setting up of pneumothorax and pleurisy, and hastened the inevitable end. Dr. Coupland's paper is important not only for his suggestions as to treatment, but also for some very interesting statistics gathered from the post-mortem records of the Middlesex Hospital. He tabulates a considerable number of cases, showing that by far the larger number follow croupous pneumonia, whilst many result from such causes as those to which reference has just been made. He also adds an account of the relative proportion in which the different lobes of the two lungs are affected, showing how frequently the upper lobe of the right lung suffers as compared with that of the left—a point to which I shall again refer in some remarks on the anatomy of the bronchi, which are to follow in the next lecture. The state of the pleura was also ascertained. There were adhesions in only a small proportion of the acute cases, and though they were present in all the chronic ones they were not always conterminous with the gangrene. In some acute cases there was more or less abundant lymph, in a few empyema, and in a few hardly any pleurisy. I will also abstract from Dr. Coupland's paper, as briefly as possible, the notes of some of the recent, but now classical, cases which have been published.

1. A boy aged seventeen swallowed a bone in November, 1883. He developed bronchiectasis, but completely recovered after coughing up the bone in February, 1884. This, I think, is most instructive, not only as showing that the bronchiectasis and induration of the lung, which had taken four months to develop, could be completely recovered from, but as indicating the line of treatment in such cases—a fact I will return to in the next lecture.

2. Dr. Magrath's case,[2] where a piece of grass became impacted in the right lung of a boy aged seven. Death occurred after ten weeks. The lower lobe of the lung was riddled with abscesses. The diaphragm (as in one of my cases) had been perforated by the abscess, and there was secondary caries of the spine.

3. Dr. Cayley's case,[3] which was one of a low form of pneumonia, resulting in a basic cavity containing five or six ounces of offensive pus and sloughs of lung substance. He had only been ill for five weeks, but had the appearance of a man in the last stage of phthisis. The cavity was opened in the ninth interspace, but the case ended fatally, being already too far advanced. There were signs of old tubercular mischief in the lungs.

4. Dr. Solomon Smith of Halifax records a case[4] where gangrene followed acute pneumonia, and where death followed an incision into the abscess after nine days.

5. Dr. Cayley's case of a gangrenous abscess following ear disease,[5] in which Mr. Gould punctured the abscess with a trocar, but on introducing the tube failed to drain the cavity at first; it afterwards, however, burst into the artificial opening, and the patient made a good recovery.

6. Some cases are recorded in a paper by Dr. Mosler, read before the German Medical Congress at Wiesbaden in 1883, in which he recommends the incision of the lung with the actual cautery for the extraction of foreign bodies. I am not able strongly to endorse this advice (though with deep incisions it may possibly be advisable), for the use of the knife does not, as a rule, lead to formidable hæmorrhage, and the charring of the tissues must cause considerable difficulty in any exploration with the finger.

7. Dr. Ed. Bull of Christiania[6] records a case of circumscribed gangrene of the lung, which was opened successfully.

It may be taken for granted, then, that the majority of the cases of gangrenous abscess which come into the hands of the surgeon are the result of acute pneumonia, and are situated near the base of the lung; and it may be added that his aid is most likely to be needed in those cases in which the gangrene is not very extensive, so that the patient survives the immediate effects of this process. Some of these cases, it is well known, recover spontaneously, the pus being expectorated; but in others a condition of things results such as is often met with in abscesses bursting spontaneously in other parts of the body—namely, that the opening being insufficient, and perhaps unsuitably placed, the sac is always more or less filled with the discharges, which in the cases we are considering are always highly septic, and therefore irritating. The abscess, consequently, shows no tendency to close, but, on the contrary, increases in size. It is not a good plan in such cases to wait long before making the external opening—that is, if the position of the abscess can be accurately determined,—because, as was pointed out when the subject of empyema bursting into the lung was discussed,[7] and as will be still further illustrated when the subject of bronchiectasis is before us, the presence of fetid pus in the bronchi and trachea is very likely to lead not only to serious consequences in the diseased lung, but also in the sound one: but, at the same time, it is not often

[1] British Medical Journal, 1885, vol. ii., pp. 427-433.

[2] THE LANCET, vol. i., p. 89, 1880.
[3] Clinical Society's Transactions, March, 1879.
[4] THE LANCET, 1880, vol. i., p. 86.
[5] Medico-Chirurgical Transactions, vol. lxvii., p. 209.
[6] London Medical Record, 1882, pp. 90, 91.
[7] Lectures on Empyema, THE LANCET, vol. i. 1886, p. 95.

wise to make an incision through the chest-wall until the situation of the abscess has been ascertained by means of an exploring trocar, and even then the troublesome question of the presence or absence of pleural adhesions has to be settled before the lung itself is incised.

That one may be misled by apparently the clearest physical signs of the presence of a cavity is illustrated by a case that I saw with Dr. Douglas Powell and Mr. Horace S. Howell. It was that of a gentleman aged about thirty-five, who had marked physical signs of a small cavity about the fourth right interspace in front, the rest of the lungs being apparently almost if not quite healthy. The condition had lasted several months, and there was at times a copious fetid expectoration, at times very little of any kind. He was fairly nourished, but had some clubbing of the fingers, and was on the whole rather losing ground. A trocar was inserted (in July of last year), but no pus was met with. The signs, however, seemed so unequivocal that an incision was made through the chest wall, and, as strong pleural adhesions were found, the lung was incised and the incision enlarged with dressing forceps and the finger; but the abscess, which I cannot doubt was in close proximity to the seat of operation, was missed. Rather free hæmorrhage and some hæmoptysis occurred, which did not, however, give any trouble, and a drainage-tube was inserted in the hope that the abscess might burst into the track thus made, as happened in one of Dr. Cayley's cases mentioned above. This was unfortunately not the case here. The wound healed without any trouble, but the patient remained *in statu quo;* at least he continued when last heard of to expectorate pus from time to time. The general health certainly improved, and the expectoration became less fetid, but I doubt whether these results can be attributed to the operation. Clearly from this case a lesson is to be learned, for if a more careful search had been made with the trocar or aspirator it is more than likely that at last the pus would have been met with, and then the cannula would have served as a certain guide to the abscess; but an incision having been once made into the lung, it is easy to understand that the finger might push the abscess (perhaps a thick-walled one) to one side or the other, and thus render the chance of opening it a very remote one. If, however, the pus had not been met with, the patient would have been no worse off for the punctures, and the surgeon would have been saved the mortification of an unsuccessful operation. Another practical point is illustrated by this case, which I have seen exemplified in several others. The hæmoptysis followed the impinging of the trocar upon some firm substance, and then slipping into an apparent cavity. No doubt it passed through some pretty large pulmonary vessel, either just before or just after the puncture of the bronchus. Until the bronchus was perforated, any bleeding from this cause must have been external, and therefore easily controllable by pressure or plugging. The deduction is that, if such an obstruction is met with, the trocar should either be made, if possible, to work round it, or a puncture should be made in a fresh position; for although the hæmorrhage itself is not likely to be formidable from so small a puncture, it may be a very dangerous thing to have a patient who is under the influence of an anæsthetic coughing up blood, perhaps in rather considerable quantities. It should be added that the wall of a gangrenous or bronchiectatic abscess would not give this sense of resistance.

Whether this was really a gangrenous abscess or a bronchiectasis I am unable to say; but it illustrates well the point I am insisting upon—namely, the unwisdom of incising the lung until the presence of pus is ascertained. The following case might have led to a similar result if we had not been successful in puncturing exactly in the right place. It was that of a man at University College Hospital, aged forty-two, who was admitted in May, 1884, under the care of my colleague, Dr. Bastian. He was no doubt a tubercular subject, one of the very hairy tubercular people. His mother had died of phthisis when he was three years old, but there were no other cases of this disease in the family. He had, however, himself twice suffered from hæmoptysis sixteen and twelve years previously, and had had right pleurisy six years before, with which he was laid up nine weeks. Beyond these illnesses, however, he seems to have enjoyed good health, though he was liable to take cold easily after the last attack. The present illness began with a violent cough in Feb. 1886, which lasted up to the time of his admission on May 2nd, and was accompanied by hæmoptysis, night sweats, and wasting. He was found to have very few physical signs on the left side; but the right side, which was larger than the left and very motionless, was very dull at the lower part, and not very resonant above. The breath sounds and vocal fremitus were deficient at the lower part. On May 5th Dr. Bastian drew off one ounce and a half of bloody fluid mixed with pus, through a puncture in the eighth interspace behind, and this was followed by a marked reduction of the patient's temperature. On May 16th I ascertained with a needle the presence of the pus, but also that the collection was a very small one, for the first puncture, which was made a very short distance to one side of that made a few days before, did not strike the cavity; and on cutting down on the lung, after removing a piece of the eighth rib and ascertaining the presence of pleural adhesions, it was found that if the puncture were not made exactly in the original spot the cavity would be missed altogether. It was found, indeed, to be clearly in pulmonary tissue, and was just large enough to admit the finger and two and a half inches long, leading directly inwards from the external opening. This is an example of a lucky puncture in the first instance, for there were no sufficiently distinctive physical signs to indicate the precise position of the abscess; and it shows that in doubtful or suspicious cases several punctures at different points should be made before the search is abandoned. The man's cough was very much relieved for a time, the daily amount of expectoration sinking from one or two ounces to as many drachms, although the discharge from the wound was quite trifling; thus affording an illustration of a point that has been observed by several physicians—viz., that the amount of expectoration is no criterion of the size of the cavity, each pellet of pus, as it makes its way over the bronchi, setting up irritation and causing a great secretion of usually watery mucus; thus, a cavity not holding more than a couple of ounces may cause a pint of expectoration in the day. The patient improved very much for a time, but then he caught a fresh cold, and his cough and expectoration became more troublesome. He also had hæmoptysis whilst he was endeavouring to recruit at Eastbourne. In August he was readmitted, with the wound quite healed; but still a great deal of dulness, with weak breath sounds and no vocal fremitus at the right base, while at the upper part of the right lung there were tubular percussion note and bronchial breathing. This side of the chest was still almost motionless, but, instead of being larger, it was now considerably retracted. He was very weak, and had no doubt tubercular changes in this lung, to which many months afterwards he succumbed.

The enormous amount of expectoration which may result from the presence of a very small cavity was well shown in the case of a patient who formed the subject of a paper read by Dr. C. T. Williams and myself at the Medical and Chirurgical Society, and reported in the last volume of their Transactions.[a] I will merely mention here that a small basic cavity, not holding more than about one ounce, in a patient sixty-seven years of age, had given rise to the expectoration of more than a pint in the day for many months, and that the free incision of this cavity led not only to the complete stoppage of this troublesome condition, but was followed by sound healing in rather more than six weeks.

I will conclude this branch of the subject by the account of two cases, one of which is a typical example, and the other an illustration of the doubts occasionally surrounding the diagnosis of these basic cavities.

The first is that of a delicate girl nineteen years of age, who was admitted into University College Hospital, under the care of Dr. Bastian, on Jan. 5th, 1886, complaining of a troublesome cough and abundant fetid expectoration. She had suffered from typhoid fever in September, 1885, from which she had recovered slowly, and had only returned to her work a fortnight before the commencement of the present illness. Her parents were alive and healthy; a paternal aunt had died of consumption, and three of her five brothers had suffered from abscesses. Her illness began four weeks before her admission, in the early part of December, 1885, with an attack of headache, vomiting, and diarrhœa. She had to give up work, and continued ill, but with no fresh symptom, until the night of Dec. 31st, when she awoke coughing, and expectorated about a pint of similar fetid material to that which she had continued to bring up in larger or smaller quantities up to the time of coming to the hospital.

[a] Med.-Chir. Trans., vol. lxix., p. 317.

Ever after the first attack of vomiting she had felt a dull aching pain on the left side, which was not altered by coughing or vomiting, so I presume that the symptoms of the acute attack were the expression of the onset of a pneumonia, which led to gangrene of the lung. On admission she was thin, flushed, and short of breath, with a weak, husky, whispering voice, breathing at the rate of 32 per minute, with a paroxysmal, distressing cough, resulting in the daily expectoration of a pint or more of highly offensive, thin, watery pus and mucus. The pain was slight, but occasionally stabbing in the region below the left breast. The temperature was about 100°; the pulse about 130. The heart's apex was not far from the normal position—fourth interspace, one inch inside the nipple. The whole chest moved badly, the left side hardly at all. The percussion note was good, except on the left side below the eighth dorsal spine, where there was dulness and almost complete absence of breath and voice sounds, and usually there were no adventitious sounds. We had therefore but very little to guide us to the exact position of the cavity. Dr. Bastian punctured the chest in the eighth space an inch behind the posterior axillary fold, and in the ninth space an inch further forward, without result. On Jan. 16th we heard moist sounds at the base of the lung and bronchial breathing in the left axilla. Guided by the greatest intensity of these signs, I passed an exploring trocar into the chest in the posterior axillary fold in the eighth interspace, and hit the cavity after introducing the instrument about two and a half or three inches. An incision was then made down upon the intercostal space, and, the pleura being found obliterated by adhesion, the track of the cannula was opened up by sinus forceps, and a large cavity was reached in the lung, from which about twelve ounces of fetid pus escaped. I did not remove a piece of the rib in this case, as the pus was very offensive; thus, though a large drainage-tube could be introduced into the cavity, a complete exploration was impossible. The finger passed, however, through condensed but broken-down lung tissue, but reached only the outer part of an irregular cavity. The tube, though four inches long, no doubt only entered the outer part of this space, but air was sucked in and out with the peculiar whiffing sound which is characteristic, I think, of cases where there is a free communication with a bronchus—that is, as opposed to cases of empyema. The expectoration at once ceased, but though the temperature on the second day fell to normal, it rose again and remained at about 100° to 101° for a fortnight, when it rose to 103°. She then coughed up a pint of offensive pus, and the dressing, which for some time had been almost dry, was soaked with a similar material. This no doubt meant that the walls of the cavity had fallen together after the first evacuation, and both its exits had become closed. The gradual accumulation of pus in the slack cavity kept up the temperature, and the sudden fit of coughing opened both of the exits again. Had I been able at first to introduce a still longer tube, no doubt this would not have happened. It is a good illustration of a common source of trouble in cases of this kind, and shows that a much longer tube is usually required than in cases of empyema. The temperature now kept about 99° to 100° for another fortnight, and we thought we might remove the smaller but longer tube which had been substituted for the original large one; but it was too soon, for the temperature went up again, reaching almost 104°, and necessitating the dilatation of the sinus and the reintroduction of the tube. After this the temperature remained for a few days about 100°, and then became peaky, ranging usually from 99° or 100° to 101°, but twice reaching 102°. There was in the meantime but slight discharge and occasional slight expectoration, and so I have no doubt that, all this while, there was not a complete drainage of the cavity. Ultimately she went to Eastbourne on March 25th, about nine weeks after the operation, still wearing the tube; and a month later returned, with nothing to show except a retracted chest with some curvature of the spine and deficient resonance and weak breath sounds over the affected part. The tube was now withdrawn, and in a week the wound was healed. The patient has since remained well.

The second, a somewhat similar case, one which illustrates the same difficulties in treatment, I saw with Dr. Broadbent and Dr. F. Russell in May, 1884. The patient, an unmarried woman aged forty-four, was seized with the symptoms of pleuro-pneumonia on the right side on May 26th. The pain in the side and back continued till June 11th at midnight, when she expectorated a large quantity of offensive pus. The expectoration, which was accompanied by high fever and purging, continued till June 19th, when I saw her. She had then a patch of dulness as large as the palm of the hand in the right front, reaching up to the nipple and down to the liver dulness. Over this area there was some puffiness and tenderness, and tubular respiration was to be heard. The rest of the chest was resonant, but loud mucous râles were everywhere audible, and the lungs were evidently becoming completely choked up. The patient was in great misery, the cough being most distressing, and apparently she had not long to live. An opening was made in the seventh interspace, immediately below the nipple, and the finger passed readily into a cavity, from which a large quantity of offensive pus escaped. It felt rough and irregular, and seemed to be an excavation in the lung itself; it certainly was not the general pleural cavity, but might of course have been a localised diaphragmatic empyema with much lymph on the walls of it. A tube three inches long was introduced, and the wound was dressed with oakum. The result of evacuating this cavity was very instructive, for not only did the expectoration at once cease, but the rest of the lungs promptly recovered, so that in a day or two all the râles had gone. The temperature fell almost or quite to normal, and the diarrhœa stopped. Unfortunately, about July 1st, the tube, none too long to begin with, was shortened without my knowledge by fully an inch; and this was followed by the same train of symptoms as occurred in the last case, when the accumulation took place in the abscess—viz., malaise, nausea, fever, and at last the expectoration of fetid pus. The sinus was dilated with bougies and a long tube (five inches) was introduced; but we did not at once obtain complete drainage, and a certain amount of pus was still expectorated, though a good quantity came through and alongside the tube. The temperature in the meantime came down to normal, and the patient experienced great relief from a suggestion of Dr. Broadbent's that she should lie upon the face, thus encouraging the escape of the pus through the wound and so diminishing the cough. The cough and other troublesome symptoms gradually disappeared; the tube by July 25th had been reduced to three inches, and the patient was convalescent and had left her bed, when she felt a sharp pain at the right hypochondrium, which soon passed off. Next morning, however, pus appeared in the motions, probably from a diverticulum of the abscess, which the tube had never drained efficiently, and this continued, though gradually diminishing, for about three weeks. The tube slipped out on July 29th and was not replaced, and from this time the patient made an excellent recovery, a little dulness and weakness of breath sounds round the affected area and a slight drawing up of the liver being all that remained from the attack.

This rupture of a pulmonary abscess into the colon seemed to me an almost inexplicable occurrence; but in January of this year I made a necropsy on a case of liver abscess bursting into the pleura, which opened my eyes as to the manner in which a diaphragmatic empyema, or an abscess even in the anterior part of the lower lobe of the right lung, may discharge itself in this way. It may pass down behind the posterior part of the pleura, keeping rather to the right and perforate the attachment of the diaphragm about the tenth rib at the posterior fold of the axilla, when it will be quite close to the hepatic flexure of the colon.

In both these cases there are the same lessons to be learned. First, if it be suspected that the cavity be in gangrenous lung it should be well opened up and explored by the finger, and a good long tube should be put in. Secondly, the tube must be kept in until the discharge has almost, and the expectoration quite, ceased, while the temperature remains low, for the cavity is probably an intricate one, and it is not unlikely that the walls will have to throw off sloughs, and cannot, therefore, immediately assume the healthy condition which is met with in the case of most empyemata. They both illustrate the complete recovery, as regards physical signs at all events, which may be anticipated in such cases.

AYRSHIRE MEDICAL CLUB.—At the annual meeting of this club, held on the 4th inst., Dr. Robertson, of Ardrossan, was elected President; Dr. Dobie, of Ayr, Vice-President; and Dr. Moore, Secretary. The membership now numbers fifty-three.

ABSTRACT OF

Lectures

ON THE

ACTION OF NERVE CENTRES AND MODES OF GROWTH.

Delivered at the Royal College of Surgeons, February, 1887,

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LECTURE I.

ON THE ACTION OF NERVE CENTRES.

MOVEMENTS are here studied as signs of action, observations being recorded by verbal description, or by the graphic method.[1] To study a movement involves the consideration of the part moved, the muscles moving it, and the nerve centres which stimulate them, while the movement itself indicates the time and quantity of action in the nerve centre corresponding; these are called the intrinsic attributes of the movement. The *time* of a movement often affects its outcome or sequence; movement of a single part is a comparatively simple fact; when several parts are acting, combinations of their movements occur. The special combinations of movements are simply the result of the time of the action of each of the moving parts. In observing movements of the digits two modes of description may be employed: the series of movements of each digit may be described, or the series of coincidences or combinations of acts may be recorded. Either plan may be used, as convenience may dictate; thus, it may be said that each of the five digits flexed at the same moment, or it may be said that the hand assumed "the convulsive posture." What we commonly call an action, such as writing or walking, is really an observed series of combinations of movements; this applies equally to spontaneous, reflex, or voluntary actions. When a child seizes an orange we observe a series of movements, each of which can be performed separately, while the character of the action depends upon the time and quantity of each of the component movements. Series of movements in plants were then described. The *quantity* of a movement is its second intrinsic attribute; it indicates the quantity of action in the nerve centre. Quantities of motor action are studied in observing postures of the body as signs of the ratios of force in the nerve centres. In "the straight extended hand"[2] we observe a sign of the temporary equilibrium of the nerve-muscular apparatus for flexion and extension. The posture may change, the fist being clenched; the change of hand posture is a sign of a change in the ratio of force acting in the apparatus for flexion and extension, the force of flexion being increased. Thus we see the outcome of the balance or ratio of quantities of motor force demonstrated by the observation of postures. Examples were given concerning other hand postures. It was argued that postures often indicate the condition of the nerve system, that they are often changed by the sight of objects, that they are due to the ratios of force exerted by opposing portions of nerve-muscular mechanism, and hence that postures are signs of ratios of action that can be controlled by incident forces, such as light, sound, mechanical irritation, &c. The total quantity of movement seen in man may depend upon the quantity of blood-supply, and upon the amount of stimulation of the subject; the blood-supply and stimulation are needed to produce movements. In anæmia and in starvation the quantity of movement is lessened. In darkness but little movement occurs in a well-nourished man; the sight of an object may be followed by the head turning towards it, and by other series of movements, such as result in the seizure of the object. The quantity of movements in plants is mainly determined by light and heat.

The proposition was then enunciated that every movement depends on some change in the time or the quantity of action in the nerve-muscular apparatus producing it, and that every such change in the apparatus must be preceded by some stimulus acting on it immediately antecedent or more remotely antecedent. Among the forces which, acting upon a man, may stimulate and control the individual movements, the following were mentioned and illustrated: light, heat, sound, mechanical irritation, &c. Every movement must have some sequence, whether it be to supply food or be expended as physical energy. The sequence of a movement must be carefully separated from the cause or antecedent. To say that the bee visits the flower to get honey is to imply that the honey causes the visits. It was argued that the bee sees the flower, and afterwards gets the honey; that it is not the honey, but the light reflected from the flower, which determines the movements of the bee. The forces which control the time and quantity of the acts composing a series of movements are really the antecedents of the results of the action. The sequences, outcome, or results of movements are often said to be useful, intelligent, voluntary, purposive, &c. What is meant by the outcome of an action being useful? What is the connotation of the term "useful" expressed in terms of physical criteria that can be observed? Concerning the meaning of the word "useful" as applied to the outcome of an action or movement, the primary idea seems to be that the outcome produces some physical change that can be observed. A movement which brings food to the subject is said to be useful partly because it produces some effect or impression on the subject. The movements of deglutition, respiration, and all the movements of organic life are useful because, among other things, they impress the subject considered. We do not say that all acts which produce an impression are useful, but to be useful there must be survival in the subject producing the act, or in others considered at the same time. It is insisted that usefulness is not an intrinsic character of any movement, but a relation of its outcome to surrounding objects.

Impressionability as a property in man may be indicated by movements. If the movements of a man are regulated and controlled by light or sound, he is impressionable to these forces. In coma impressionability is lost, but the eyes may move spontaneously and independently of one another; this is seen under chloroform, and in the deep sleep of infants. Actions may be defined as similar if on two or more occasions there be movements of the same parts of the body, the action of each part respectively being alike in time and in quantity on each occasion. In a body of soldiers at drill the movements of each man are similar. Thus actions, or series of movements in the same or in corresponding parts, are identified as similar on account of their intrinsic attributes. Similar movements may recur in a man, or be repeated; each such occurrence after the first is a repetition or reversion of the action. A trick or habit in a man may revert in his children. Similarity of actions is here defined as an observed fact, not as a question of relation to antecedents or sequents of the action.

Automatic or spontaneous movements are such as have no special antecedents controlling their attributes. Athetoid movements are automatic; they occur in similar series whenever any impression is made upon the subject. *Instinctive movements*, so called, probably imply a certain structure of the nerve system due to its inheritance—such that when stimulated by certain surrounding forces the movements resulting should be regulated by those forces, the sequence of such acts producing some impression upon the subject directly or indirectly. Purposive or intelligent movements are probably always controlled by forces surrounding the subject, or by impressions previously made; the sequences of such movements, rather than their antecedents, possess the characters of intelligence. It seems that the purposive or intelligent character of a series of movements is not due to its intrinsic attributes, but to its sequents. The respiratory movements are considered very automatic when occurring in regular and uniform order of time and quantity; but when the sight and sound of various objects modifies them, to form speech, laughter, &c., then they are signs of mental action. All expression of mind and mental states is by series of movements, and these of course have their intrinsic attributes, observable in the body. *Coördinated movements* are such series of acts as have special characters, dependent upon the time and quantity of the component movements. It is also an essential character that the attributes of the series are determinable by sight, sound, or other modes of force acting

[1] See Journal of Physiology, vol. iv., No. 2; and vol. vii., No. 7.
[2] See Physical Expression, its Modes and Principles, chap. ix.

upon the subject. Movements may be classed according to their results as respiratory, acts of deglutition, &c. For the purposes of a scientific classification of movements it is very desirable that they should always be described according to the parts moving, their intrinsic attributes, the antecedents and sequents, or outcomes. All these characters are capable of direct observation.

It has been said, What is the good of these studies of movements? What practical advantages are likely to result therefrom? Nerve-muscular movements are physical signs of brain action; with but few exceptions, they are the only signs of brain action, and the only physical signs by which we know anything of the action of mind. Describing facts in man as we see them, in terms of movement, is probably the best mode of attempting to do away with such metaphysical terms as "voluntary," "intelligent," "purposive," in scientific descriptions. Facts must be described in physical terms before we are likely to find out their physical causation.

LECTURE II.

THE STUDY OF MODES OF GROWTH.

In making a systematic study of movements in man, we study one function in one class of subjects. We observe the movements as signs of the time and quantity of action in the loci of nerve tissue which produce them; thus we learn much concerning vital action in one kind of tissue. If the methods and principles found useful in studying this one function in one tissue have been properly considered, they are likely to be useful in studying other functions in other living subjects. In studying movements we learnt to note the parts of the subject capable of acting separately. We learnt next to study the intrinsic attributes of each movement, and also its antecedents and sequents. Having studied the nerve-muscular apparatus of man as our special subject, and deduced certain principles therefrom, we proceed to apply these to the study of various problems. We shall find that many phenomena of growth are determined by the forces which control the time and quantity of growth in the units of living tissues. The study of movements requires the observation of a definite number of parts of the body and a definite number of loci of brain tissue; in growth the number of parts, or units, capable of separate action is practically indefinite. Movement is in many cases a reflex act; growth is, presumably, never spoken of as a reflex action. Movement often follows quickly upon an impression; if growth results, it is slow in its manifestation. Movements in man are often signs of intellectuality; acts of growth are never said to be signs of mind. The many beautiful adaptations of growth in plants are not considered signs of intelligence in the plant; but the movements of an insect in visiting the flower are considered signs of its instinct. The results of growth are material changes, and as such are permanent records of action, capable of preservation; movements do not necessarily leave any permanent record in the subject of such kind as can readily be seen and preserved. In speaking of movements as signs of action in nerve tissue and of growth, we deal with two functions in the body. The outcome of nutrition in the child will vary at different ages; in the early years much nutrition is consumed in making weight; in adult life much energy is consumed in movement. In a child becoming choreic the weight falls and movement increases. If we believe in one series of laws of nature governing movement and growth, we must expect the forces controlling movements to be those affecting growth.

We may observe the *time* of any movement, vital act, or act of growth; we commonly speak of relations in time as the order of growth; in describing the processes of development the order of development is most important. We more commonly study the time of movement than that of growth, because the processes of growth are slower, and observation must be continued for a longer period to see any change than is the case in observing movement. Visible movement indicates its own time to the observer, but does not necessarily leave any permanent record; growth is a process which usually does not impress the observer with the time of its acts, but leaves a result in visible form. A visible effect of movement in man is to produce some fresh posture, or condition of temporary equilibrium. With regard to observation of the effects of forces upon the subject, in the case of growth a much longer interval usually elapses between the stimulation of the subject and the sequential effect than that which takes place in a reflex movement. Hence more instances of growth are called "spontaneous" than in cases of movement. In flowers cross fertilisation often results from the fact that the anthers are, in certain cases, ripe before the pistil. The time of dentition, the time when hair grows upon the scalp, face, or pubes, are characters of the normal process.

The second intrinsic attribute of growth is its *quantity*. Many phenomena may be described, and receive some kind of explanation by noting the ratios of growth in the parts compared. To note the ratios of growth in a specimen is analogous to studying postures which are due to ratios of action in the nerve-muscular apparatus; this suggests the hypothesis that the forces which lead to certain postures in man may be those which control his growth. Illustrations were drawn from the modes of growth seen in the development of buds, and from comparison of wild and cultivated plants. The ratios which indicate growth in man are the subjects of anthropometry; ratios indicate the differences in growth of young and old leaves and in the parts of man at successive ages. Unequal proportional growth of bilateral parts is a common cause of curvatures; this is seen in the increasing curves of bones in the fœtus as development advances, and is abundantly illustrated in the stems of plants. In the two halves of the body and in the corresponding members the ratios of growth are usually equal, but the right arm is often larger than the left in girth—probably owing to the greater amount of stimulation it receives from the brain.

Among the forces producing certain ratios of growth we see that light increases the size of leaves, while it diminishes growth in internodes, and does not control the growth of flowers. Light diminishes growth in the side of the stem of a plant which is most illuminated, and curvature towards the light results. Mechanical pressure, heat, and electricity may to some extent control quantities of growth. Gravity in plants causes upward curvature of the stem and downward curvature of the root. If a circular hole be made in an iron plate, heat causes equal extension of the metal in all directions, and the hole is enlarged, but remains circular. For similar reasons, in the growth of bones in which uniform extension is taking place in all directions, the foramina enlarge, retaining their shape; this is seen to a certain extent in the foramina of the pelvis. In the skull of the infant the anterior fontanelle becomes larger in the early stages of growth. If in the processes of growth one tissue or one part grow in greater quantity than others, that tissue or part is said to be hypertrophied. The sequences of proportional growth are many. In a composite flower the increased growth which occurs in the style after the anthers have discharged their pollen is followed by cross fertilisation. The ratios of the growth of parts may bring about asymmetry of form, malformations, or variations in development, and consequently in the use of parts; examples are seen in descriptions of short-horned and long-horned cattle, and in the proportions of the beak of pigeons. Look at a germinating seed; it consists of an embryo enclosed in its testa or covering; germination begins by the swelling and growth of the embryo; but the testa does not grow, it may stretch a little, but soon the unequal increase in size of the embryo and seed case is followed by splitting of the testa.

We often speak of one subject growing similarly to another, or of the growth in two subjects being similar. It often happens that the similarity of growth is in part due to equal ratios of growth in the two; in this sense similarity of growth may occur in unlike subjects if the ratios of growth are equal in each. We found that movements in two men may be said to be similar when they occur in the corresponding parts of each, and are alike in their time and quantity. In like manner acts of growth are sometimes said to be similar when they occur in the corresponding parts of two or more subjects at the same time, and in the same quantity as in two pea-seeds grown under similar circumstances. Similarity of growth may be partial; in two subjects the growth may be similar as to time, or quantity, or kind. When two processes of growth are different in kind they may be similar in time; the growth of leaves and of underground tubers may occur at the same time, and this may be the only point of similarity between the two processes of growth.

In classifying facts concerning the processes of growth according to such intrinsic attributes as are observable, our object is to seek the causation of the attributes observed.

Having classed a number of facts as examples of unequal bilateral growth, we may seek to determine the causation of unequal bilateral growth. In pursuing such methods of inquiry we follow methods similar to those which aided us in studying the motor functions of the brain. Thus we have lines of thought to guide observation. It is possible, and indeed highly desirable, to arrange a museum in which specimens are classified according to the attributes of their growth, and the forces that stimulated their growth and produced that special ratio of their attributes. Probably this was in part the principle followed by John Hunter.

The rules that should be followed in making analogies were pointed out. It was shown that we can only compare things or acts as to the characters or attributes which they possess in common; we may compare like functions as to their time and quantity; it is only as to the time of action that we can compare unlike functions; we do not directly compare the material things, but the attributes of their functions. Growth in a child and in a plant were then compared, and other examples were put forward. In our desire to give some kind of explanation of facts in nature we use processes of analogy. Acceptance of the hypothesis of evolution encourages the study of analogies; our purpose in making analogies between processes of growth is to classify examples in the best manner for seeking their causation. The term "reversion" is used to imply that the outcome of growth observed is similar in its intrinsic attributes to others that have previously been observed. The reversion is a repetition or reappearance of vital acts similar in their intrinsic attributes, and occurring in similar subjects. The following proposition was enunciated as an epitome of the principles illustrated: "Every vital act, or act of growth, requires among its antecedents a supply of pabulum, and stimulation by some force incident to the subject."

PYREXIA AND HYPERPYREXIA.

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(*Continued from page 467.*)

THESE clinical facts afford distinct evidence that injuries and non-inflammatory lesions of certain parts of the nervous centres cause a rise in the temperature of the body as great as that noted in inflammatory and febrile ailments. That such lesions give rise to such results shows as clearly as evidence can that the nervous system exercises a marked influence over the body heat. That all injuries of the nervous centres do not give rise to this result shows that this influence is not generally distributed, but is limited to particular parts of the nervous centres. To recognise this is to go a long way towards recognising the existence of a thermic centre. And on no other view than this can the facts which have been adduced be explained. The evidence in support of the doctrine of a thermic centre is indeed little, if at all, less potent than that on the strength of which we recognise a vaso-motor, a respiratory, a cardiac, and many other centres, whose existence we do not call in question. The chief difference is that the exact area of the thermic centre has not been so accurately defined, though sufficient evidence has been adduced to end some observers to indicate its probable seat. [1]

So far as our present inquiry is concerned—so far, that is, as concerns the theory of fever—the exact location of the thermic centre is not a matter of importance: the important thing is that we should recognise that the evidence all tends to show that there is such a centre exercising a direct and dominant influence over the body heat, and that rise of temperature may be directly due to disturbance affecting it. The acquisition of such knowledge could not fail to materially influence our views as to the causation of fever. If there exist a thermic centre, and if injuries affecting this are capable of causing a rise in the body heat, may not the preternatural heat of ordinary febrile ailments be also directly due to the disturbing action on this centre of the so-called fever poison? Such a question was bound to arise so soon as the full bearings of the facts, physiological and pathological, which have been related, were recognised. The necessary outcome of the recognition of a thermic centre was a "neurotic" theory of fever. And no time was lost in enunciating it; for in the same volume in which his experiments are related, Wood [1] starts this theory. "Granting," he says, "the existence of a fever centre in the nervous system, the laws of life teach us that there must be poisons capable of acting upon it directly, so as to produce fever. Such a fever would certainly be neurotic, although produced through the blood, the vital fluid acting simply as a common carrier. With this understanding of the terms, distinctly clear proof is at present wanting that the fever even of pyæmia, of the exanthemata, or of any so-called blood poisoning is strictly hæmic, since such toxic fever may be due to an action of the poison upon the central nervous system." This theory has been adopted and more fully advocated by Hale White, who believes that "in specific fevers, inflammations, traumatic and urethral fevers, the rise of temperature is due to peripheral stimulation of afferent nerves reflexly affecting the calorific centre." [2]

That there exists somewhere in the brain a centre controlling and regulating the production of animal heat, and that lesions affecting this may cause the temperature of the body to rise, is a proposition which, in the face of the facts related, can scarcely be called in question. It is a clinical fact, demonstrated by many independent observations, made during the last twenty years, that non-inflammatory lesions of certain parts of the nervous centres have for one of their symptoms a great and rapid rise of temperature. But, on the other hand, it is equally a clinical fact that the body heat is raised during maladies in which there is no suspicion of lesion of the nervous centres. So various are the maladies of which increased body heat is a symptom that it is *primâ facie* improbable that this increase should in all cases be brought about in the same way, and the more we consider the clinical facts daily brought under our notice the more apparent does it become that all fever-producing causes are not similar in their mode of action. And, independently of the clinical evidence, a consideration of the physiology of thermogenesis leads to the same conclusion.

The thermal apparatus consists of various parts, and is distributed over the whole body, more or less. First there is the thermal centre, situated in the brain, somewhere above the junction of the pons and medulla. Such a centre would be of no use, and could be no centre at all, without a connexion with the parts of the body in which heat is produced, for without this it could exercise no influence over heat production. It must equally be in direct communication with the parts of the body by which heat is eliminated, for without this it could exercise no control over heat elimination. A thermic centre could no more control and regulate the production and elimination of heat without a connexion with the seats of heat production and heat elimination than the vaso-motor centre could control the circulation through the minute arteries without being in communication with the muscular coats of these vessels. The only way in which such a connexion could be established is by means of nerves, for nerves are the sole media by which impressions are conveyed to and from nerve centres. The parts which go to form the thermal apparatus, therefore, are: 1. The tissues in which heat is formed. 2. The surface from which heat is eliminated. 3. A central controlling power in the brain. 4. Nerves connecting this with the heat-forming parts of the body. 5. Nerves connecting it with the heat-eliminating surface. The harmonious working of these different parts of the thermal apparatus gives rise to the phenomena of thermogenesis; and the general result is a persistent temperature of 98·4°. Interruption of this harmony causes the temperature to rise or fall. Fall of temperature is due either to lessened formation or increased elimination of heat. Rise of temperature is produced either by increased formation or decreased elimination. The latter cause (the hypothesis of Traube) we have already considered in its application to the explanation of the increased body heat of fever, and have seen reason to reject it as incompetent to explain that phenomenon. There remains for consideration only increased formation. Rise of temperature due to increased formation may be brought about in two ways: by direct stimulation of the processes by which heat is formed; or by diminished activity of that by which heat-formation is inhibited, or kept within due bounds.

Rise of temperature due to direct stimulation of the process by which heat is formed.—This process is the tissue metabolism. Rise of temperature thus produced must, therefore, be brought about by some agency which increases that metabolism. Heat is an excretory product, a result of

[1] P. 345. [2] Practitioner, Jan. 1886.

retrograde tissue change, and cannot be produced apart from that change. To say that heat could be directly brought about by stimulation of a heat-producing centre without increased tissue change would be to place heat as a product on the same level and in the same category as volition and emotion, which is absurd. No, increased heat due to direct stimulation of the heat-producing process must be due to the operation of some agency capable of causing greatly increased activity of tissue metabolism. But the most potent nervous influences of which we know, those which exercise the most powerfully stimulating influence over tissue metabolism and the nutritive processes which constitute it—happiness, change of scene, &c., —never do more than bring metabolism to the standard of health; they cause increased activity of the trophic influences which preside over metabolism, but they never raise the temperature above the normal. That the continuance of normal tissue metabolism is dependent on influences conveyed to the tissues by the trophic nerves is undoubted. But there is no evidence to show either that any influence so conveyed is capable of causing the temperature to rise above the normal standard, or that stimulation of any portion of the nervous centres is capable of causing such increased body heat as is noted in fever. Rise of temperature due to direct stimulation of heat-production must therefore result from the operation of some cause whose influence is exercised directly, not on the nervous system, but on the tissues in which heat is formed, the morbific action taking place, not in the nervous centres, but in the structure of the tissues. We can no more have increased formation of heat without increased activity of the processes during which heat is formed, than we can have increased formation of urea or increased formation of carbonic acid without increased activity of the processes during which they are formed. That is the combustion theory of fever—a theory which we shall by and by see fitly and accurately explains the rise of temperature in the most common and important febrile ailments with which the physician has to deal.

Meantime we are dealing with the influence of the nervous system. Though there is no evidence of the existence of a special centre for heat production, we nevertheless admit, and argue for, the existence of a thermic centre. If it has no influence in heat production, what is the function of this centre? All evidence tends to show that its function is essentially inhibitory, that it controls heat formation, and by its ever-constant action prevents it from passing due bounds, and so helps to keep the temperature at the normal standard. Inhibition restrains and regulates functional activity, as the reins restrain and regulate the pace of a spirited horse. Slacken the reins, and he hastens his pace; let them go, and he is off at the gallop. Inhibition is an active, not a passive, agency, and is in constant operation. This is well exemplified by the action of the vagus on the heart; stimulation of that nerve slows the heart's action, and, if the stimulus be strong enough, may arrest it altogether, the arrest taking place in diastole. But the nervous system which supplies this inhibiting force supplies also another, which, reaching the heart by another channel, has exactly the opposite effect; it stimulates the heart to increased activity. These two forces are in constant operation, and so counterbalance each other that the heart is normally kept beating at the rate of about 70 a minute.

Just as there is no organ whose normal amount of work represents the full measure of its capacity, so there is no function whose normal state of activity represents the full capacity of its performance; each is restrained and kept within physiological bounds by the inhibiting action of the nervous system. The heat-producing function of the body is no exception. Normally, heat production is counterbalanced by heat elimination; but that is only while heat production is kept within due bounds by the constant control of the heat-inhibiting centre. Let the rein be slackened, or heat inhibition impaired, and the temperature runs up several degrees, and pyrexia results: let the reins be cast loose, or heat inhibition paralysed, and heat production is freed from all restraint; it is off at the gallop, and hyperpyrexia results. That is the neurotic theory of fever.

These are the two theories of fever with which we have to deal: 1. The combustion theory, according to which the rise of temperature results from increased activity of the process by which heat is naturally formed in the tissues. 2. The neurotic theory, according to which the rise of temperature is due to impairment of that inhibitory force by which the heat-producing process is kept within normal non-febrile bounds. These two theories are not antagonistic. Each is complete in itself, and exists independently of the other. Each has its own special sphere of application.

There are maladies characterised by increased body heat in which the rise of temperature is best explained by the combustion theory. Others there are also having for one of their characteristics a rise of bodily temperature on which that theory throws no light; but of whose increased body heat the neurotic theory affords an adequate explanation. Here comes in that test of practical utility to which all theories should be subjected, and on the results of which should depend their acceptance or rejection. It will lead to a clearer understanding of the whole subject if we take the neurotic theory first.

The clearest and most undoubted cases of neurotic pyrexia are those in which the rise of temperature succeeds, and is symptomatic of, a non-inflammatory lesion of the nervous centres. Examples of such pyrexia we have in that which accompanies cerebral hæmorrhage, tumour of the brain, and injuries of the cervical cord. No other explanation can be given of the rise of temperature in these cases except that offered by the neurotic theory as here set forth. It is impossible to regard the results of such lesions, consisting as they essentially do of pressure upon or laceration of a portion of the nervous centres, as other than paralytic in nature. The effect of all such mechanical lesions is not to increase, but to impair or abolish, function—to produce more or less paralysis. The only way in which a destructive and non-inflammatory lesion could cause temperature to rise is by impairing that function which normally prevents it from rising—in other words, by impairing heat inhibition. Rise of temperature thus produced will vary according to the extent of the lesion; in slighter injuries there may be no serious damage to the heat-inhibiting centre, and no great interruption of the connexion between it and the heat-forming tissues, and consequently no greater rise of temperature than is noted in cases of cerebral hæmorrhage in which the sanguineous effusion is small and does not open into the ventricles. In more extensive lesions, in which the inhibiting centre is more seriously damaged, or the connexion between it and the heat-forming tissues more seriously interrupted (as in severe cases of cerebral hæmorrhage in which the effusion is more extensive and tears its way into the ventricles), the temperature rises rapidly and to a much higher point; while the highest temperature of all is noted in cases of crushing of the cord, in which the heat-forming parts of the body may have their connexion with the heat-inhibiting centre cut off more completely than is likely to be the case in any intracranial lesion.

Admitting the existence of a thermic centre, whose function it is to control heat formation and prevent undue rise of temperature, we have no difficulty, in the maladies and injuries to which reference has been made, in attributing the increased body heat to interference with that function. The temperature rises because the reins are slackened. The sequence of events seems to admit of no other explanation. Carrying out this line of argument, we cannot fail to see not only that the rise of temperature thus induced must be directly as the extent to which heat inhibition is impaired, but that paralysis of the thermic centre, by abolishing inhibition and leaving heat production in uncontrolled possession of the field, must lead to hyperpyrexia. And the more we consider the pathogenesis of febrile heat, the more apparent does it become that impairment of inhibition is a much more likely cause of hyperpyrexia than is direct stimulation of heat production. Heat inhibition remaining unimpaired, tissue metabolism could scarcely cause those very high temperatures which characterise some cases of hyperpyrexia. Heat inhibition being paralysed, there is no difficulty in seeing that the temperature cannot fail to rise, and to go on rising, so long as tissue metabolism and heat production continue.

All cases of hyperpyrexia we therefore regard as being probably of neurotic origin—as due to some cause which exercises a paralysing influence on the thermic centre. Pyrexia may result either from increased production or from defective inhibition, but marked hyperpyrexia is probably due only to defective inhibition. In the cases hitherto instanced there has been a direct lesion of the nervous centres to explain the paralysis of the thermic centre and the consequent rise of temperature. Other cases there are, however, in which the evidence of paralysis of that centre is equally marked, in which hyperpyrexia is pronounced

but in which the sequence of events by which it is brought about is not so apparent.

But mechanical lesions and organic disease are not the only causes of local paralysis. Paralytic symptoms, often not much less marked than those which follow organic lesions of the nervous centres, occur in hysteria; we recognise them, too, in connexion with gout, rheumatism, and disease of the kidney, and we constantly find them occur as a sequela of diphtheria. Excessive functional use may also lead to impairment and partial paralysis of a part, as in scriveners' palsy. *(To be continued.)*

A CASE OF RHEUMATIC HYPERPYREXIA.

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THE case of rheumatic hyperpyrexia read by Dr. Carrington at the last meeting of the Clinical Society (at which I was unable to be present) reminds me of one that occurred to me a few years ago, in which the difficulties of treatment in private practice had to be met, and were met successfully, though the patient was subsequently removed to the hospital that any relapse might be anticipated.

On October 5th, 1882, I was asked by Mr. F. G. Larkin, of Trinity-square, to see with him a patient living in the neighbourhood. He was a man aged forty, and had been suffering from rheumatic fever for a week, during which time the pains had not been very severe, and he had been treated with salicylic acid in doses of twenty grains every six hours. There was apparently nothing unusual in the case until midnight on Oct. 4th, when sweating, which had hitherto been profuse, ceased, the joints were no longer painful, and in the course of the next few hours he became delirious. At 7 A.M. on the 5th he was beginning to be drowsy, and his comatose condition rapidly developed. We saw him together at 12 noon, when he was quite unconscious, with commencing stertor, and quite incapable of being roused. The temperature in the axilla was 107·6°. There was no bath in the house, but we were at once provided with sponge and cold water, and, having stripped the patient, sponged him freely all over. Shortly afterwards some ice was procured, and while some pieces were put in the water to cool it, other pieces were rubbed gently over the whole surface of the body. For ten or fifteen minutes he still lay utterly helpless, and his breathing became even more stertorous; but after the lapse of that time, his temperature now being only 105°, he began to rouse a little and resist our attentions. By 12.30 Mr. Larkin had procured a full-sized bath from his house, and the patient was placed in it, though not without a good deal of struggling in a dazed sort of way, which of course we were very glad to see. He was, it appears, used to a cold bath, and seemed after a little to comprehend the argument of his wife that it was only a repetition of his ordinary morning proceedings. About 12.40 he appeared so thoroughly roused, the skin so cool, and at the same time his respiration and pulse were so quickened by the struggling which he unconsciously offered, that we removed him, dabbed him dry, and placed him in blankets. He now recognised his wife, and made even joking remarks. The pulse was 150, the temperature 98° in the axilla. Ten minutes later the temperature was 99·5°, the pulse 140. In bed, before the bath, while being sponged, and also in the bath, he passed a quantity of yellow fluid fæces. For the time he seemed out of danger, but knowing the possibility of a relapse of hyperpyrexia, and finding it was almost impossible to have him watched at home without putting them to a greater expense than they could well afford, it was decided to remove him to Guy's Hospital, which was only half a mile distant. He was therefore wrapped up in blankets, and carried down into Mr. Larkin's carriage. He sat up in the carriage, looking terribly collapsed, pale, and livid about the lips; but at 1.15 he was comfortably in bed in the clinical ward of Guy's Hospital under the care of Dr. Wilks, as I had no charge of beds at the time. On admission, his temperature was 101·2°, pulse 148; he was free from pain. At 2 o'clock, temperature 101·6°, pulse 132. He did not know that I attended him in the morning, or that he had ever seen me before. He was only just conscious, appeared to understand what was said to him, but answered questions slowly. At 2.30 P.M., temperature 102·4°, pulse 130, respiration 36. He was ordered half an ounce of brandy every two hours. His feet were rather cold, and he had some shivering. He was still free from pain, but was beginning to perspire a little at 4.30. The temperature was taken nearly every hour. Up to midnight it oscillated between 102° and 102·6°; it reached 103° at 2 A.M., and varied from that to 103·8° until noon on the 6th. Pains returned in the joints on this day; he was delirious, and slept but little during the night. The highest temperature on the following day was 102·8°, and again he was delirious at night. From this time he improved, and, though he had a slight return of pain and pyrexia on Oct. 21st, the latter never rose above 102°. He was out of bed on Nov. 7th, and left the hospital on Nov. 13th.

There is not the slightest doubt that this patient owed his recovery to the vigorous application of cold at a time when his temperature was 107·6° and he was already unconscious, with stertorous breathing. And though it is impossible to predict what may in the future be done by antipyretic drugs, the use of cold water and ice is still the most efficient means of reducing the temperature in these cases. We have a great advantage in large towns. Most that is required can be brought together in a short time. A bath could be probably procured by purchase or hire in time to be of value. Ice may often be obtained in a few minutes, and in the meantime, a mackintosh or a sufficient thickness of blankets or old linen having been placed under the patient to protect the bedding, he may be freely sponged with the coldest water that can be procured. Or, failing the bath or ice, cold water may be used in the form of a wet pack. The principle is the same in all cases, and that method must be employed which is readiest to hand, and which will most quickly reduce the temperature. In the present case, while waiting for the bath, a rapid and decided effect was obtained by rubbing the surface of the body with lumps of ice big enough to be conveniently held in the hand. In country practice, I can imagine the difficulties are much greater, especially in the summer; probably the wet pack, often repeated, would be most often serviceable.

It is of interest to note that this patient was comatose, with a temperature of 107·6°, and that after the temperature was reduced by cold it never again rose to a dangerous height. About the time of its occurrence two other cases were published with precisely these features—viz., coma, threatening death, when the temperatures were 107·2° and 107·4° respectively, and no second rise of temperature to hyperpyrexia. One was published by Dr. Sinclair in the *Edinburgh Medical Journal* for August, 1882, the other by Dr. Bates in the *British Medical Journal* for October 20th, 1883, and I think I have seen other similar cases recorded since. The fact that life can thus be saved in many cases by one great effort should lead us to make the effort in a determined way when the occasion arises.

St. Thomas's-street.

ONE HUNDRED CONSECUTIVE CASES OF ABDOMINAL SECTION.

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THE following table presents in brief the nature of the cases, with the number of each class, as also the recoveries and deaths:—

No. of cases.	Operation.	Recoveries.	Deaths.
50	Ovariotomy	49	1
9	Hysterectomy	9	—
15	Supra-vaginal hysterectomy	12	3
12	Removal of uterine appendages for disease	10	2
3	Removal of uterine appendages for fibroma	2	1
1	Removal of hydatids of peritoneum	1	—
1	Removal of retro-peritoneal cyst	1	—
1	Incision and drainage	1	—
7	Exploratory operations	7	—
1	Incomplete operation	—	1
100		92	8

Under the above heads I propose to notice the salient points of the more remarkable cases. Before proceeding to analyse the cases, I would make this general remark that I

have operated in every case of abdominal tumour that has come under my care, whether considered favourable or unfavourable, with the exception of fibroid tumours of the uterus and tumours diagnosed as malignant. In the case of the former of these, a careful selection has been made of such as, from the symptoms and the circumstances of the patients, seemed to me to justify the resort to operation; and these form only a small proportion of the number actually under observation.

Ovariotomy.—Under this head are comprised all cases of ovarian cystoma, parovarian cyst, and cyst of the broad ligament. Of the fifty cases, both ovaries were removed in sixteen instances. The second ovary was in a state of disease more or less marked, or was so injured in the removal of the primary disease as to necessitate its removal also. This state of disease varied greatly in extent. In one extreme the organ was in a state of atrophy, with commencing papilloma on its surface; its fellow, 2 lb. in weight, furnishing a typical example of papilloma, apparently originating on the surface. In another extreme, in the opposite direction, the organ was enlarged to 4½ lb.

Adhesions proper (i.e., the consequence of inflammatory action), more or less extensive, slight parietal or omental up to universal, were present in thirty cases, and enucleation had to be done in four cases. Of the latter the enucleation was single in two and double in two. Of the single cases, one was a suppurating cyst, weighing 3½ lb., enveloped in the left broad ligament, and the other was a large tumour of the left ovary, 17 lb. in weight, and in its separation between twenty and thirty ligatures were employed. There were several pints of free fluid in the peritoneum, and there was considerable pyrexia before operation. Of the two cases of double enucleation, in one the disease appeared to have taken its origin in the left side and to have invaded the right side, where, in the process of separation, the corresponding ovary was found as a flattened body, surrounded by connective tissue. In this case the appearances gave rise to the opinion that before the onset of the disease both ovaries were covered by peritoneum, and therefore situated *in* the broad ligament. As a result of this extensive enucleation, which involved the division of both Fallopian tubes, the uterus was deprived of all its lateral support, and, being at once a source of danger and a useless appendage, it was removed by supra-vaginal hysterectomy. Thus the operation was at once a double ovariotomy and supra-vaginal hysterectomy. The patient recovered without a bad symptom. The tumour weighed 15½ lb. In the other case the left tumour weighed 5 lb., and the right 1 lb.

The next most noticeable case is one of recurrent colloid. In the first operation, on Nov. 13th, 1883, the right ovary formed a tumour 31 lb. in weight, and the left one of 2 lb. Both were typical examples of the ruptured colloid tumour. The peritoneum was extensively infiltrated with this substance, and the omentum was very much thickened. In the second operation, on July 14th, 1886, a tumour, weighing 13 lb. and of the same character as the first, was found attached, by a medium-sized pedicle, on the left side of the pelvis, in the region of the sigmoid flexure, with which it had a very close connexion. The intestine was separated, and the pedicle was secured by double ligature in figure of 8. Strictly speaking, this can hardly be called an ovariotomy, but as the disease originated with the ovaries, I have thought it best to include it under this head, with this explanation. The omentum was now very much more enlarged by colloid deposit, and formed a mass of the size and shape of my two hands placed together palm to palm. In both operations the loose colloid was washed out with warm water, and in both the drainage-tube was used—in the first for 102 hours, and in the second for forty-eight hours.

Another remarkable case was that of a very fat woman, aged sixty-six years. In addition to a tumour weighing 16 lb., there was an enormous umbilical hernia measuring between 4 in. and 5 in. across, with the omentum extensively adherent. The sac was freely laid open in the median line, the omentum ligatured in several portions and divided; the sac was then dissected out and the wound closed by peritoneal sutures of fine silkworm gut (cut off short) and by deep sutures, and so loaded were the parietes with fat that for the thickest part my 3½-inch needles were only just long enough. The patient made an excellent recovery.

In five cases there was twisting of the pedicle. In two of these I diagnosed the condition from the fact that in each there was a history of acute mischief within the peritoneum (such as pain, vomiting, and fever) followed by marked diminution of the size of the tumour. Of course these tumours were extensively adherent.

In three cases the tumour was dermoid. In only one of these were there any adhesions; these, however, were very old and confined to the pelvis, in which the tumour, weighing 10½ lb., was extensively and firmly fixed. In this case it was necessary to wash out the pelvis with warm water and to use the drainage-tube, and although the tube was left in for over six days the temperature only reached 100·2°.

Rupture of the cyst occurred in seven cases. In one of these the contents were thick colloid; in one there had been hæmorrhage into the larger cyst, which had ruptured; one was a papillomatous cyst and all its fluid had been evacuated; and four were examples of the ordinary mucine colloid. One was a case of suppurating cyst enveloped in the left broad ligament, 3½ lb. in weight; and in one there was, in addition to a tumour of 22 lb. on the left side, a chronic abscess between the right ovary and its tube.

The drainage-tube was used in twenty-nine cases for periods varying from twenty-six hours to seven days. Contrary to an opinion recently expressed, the results go to prove that the drainage-tube does not irritate the peritoneum, and is not thereby a source of danger; for without a single exception the product of the tube gradually diminished until at last not more than half a drachm of pale, clear, amber-coloured or almost colourless serum was obtained, and furnished the indication for its removal. On the contrary, I have distinct evidence, both in my own practice and in that of others, to show that the drainage-tube may be removed too early, and a fatal result be thus brought about.

In twenty-two cases the peritoneal cavity, more especially the pelvic portion, was washed out with plain warm water, and no attempt was ever made to sterilise it, as it is called—that is, to deprive it of all or any of Mr. Lawson Tait's "thirty-six beasts." As a rule the temperature is such as to be agreeably warm to the hand; if there has been much sanguineous oozing from torn adhesions, the temperature has been raised to at least 110°; and if at any time the water offered me has been too hot, it has been cooled down by adding the ordinary water of the hospital. For the purpose of pouring in the water I have usually employed a pint jug with a spout. It is almost needless to say that I have not seen any evil results follow this practice, but, on the contrary, I believe, it has been of distinct advantage. It is especially useful in the case of effused colloid matter and of dermoid tumours that have ruptured in the course of their separation, and the water should be used very freely.

The only death in the series occurred in a woman aged fifty-six, who was in a state of great emaciation, with a chronic bronchial cough. The tumour weighed 13 lb., and had been once tapped. It was one of the cases in which the pedicle had been twisted, and severe hæmorrhage had taken place into the large cyst. The tumour was universally adherent to the parietes, omentum, pelvic cavity, and to about two feet of intestine with its mesentery, and many ligatures were required. So great was the oozing from the parietes that I was induced to employ the cautery to some of the more freely bleeding surfaces, but it failed completely, and I then closed the wound, leaving in a drainage-tube. The cough gave no rest to the injured parts within the abdomen, and the patient died in five days and a half. The post-mortem examination revealed some adhesive peritonitis and great congestion of the lungs. It would have been better, I imagine, to wash out the peritoneum with *hot* water and trust to the drainage-tube than to use the cautery in such a case. It will not be out of place to state here that the mortality of my last hundred cases is only 5 per cent.; that of the last ninety only three have died, that of the last fifty-five only one has died, and that the last forty-five have all recovered.

Hysterectomy.—By this term is meant the removal of a pediculated fibroid tumour of the uterus; that is, without opening the uterine cavity. It does not necessarily include the removal of the appendages. Of these cases there are nine in the table, with a clean record. In one of these the appendages were not removed. In two of the cases the pedicle, though of considerable thickness, seemed suitable for the ligature, and I proceeded to treat them in that way. For this purpose the pedicle was first compressed by very powerful forceps, then transfixed and ligatured. After cutting away the tumour in such a way as to leave the stump in the form of two flaps, I sutured these together; but before the process was completed the stump was already oozing. I therefore applied the serre-nœud, and the patients

recovered without causing a moment's anxiety. Thus all the cases were treated by the extra-peritoneal method, and with my modification of Koeberlé's serre-nœud; and when I state that all the cases that I have thus treated—thirteen in number—have recovered, I think it must be admitted that there is much to be said in favour of this method of treatment.

Supra-vaginal hysterectomy.—As the term implies, this class comprises all the cases in which the uterine body has been involved in the disease, and has been removed at or about the level of the internal os. They are of a much more serious nature than the former, with which they should not be classed. Of these there are fifteen, not including the case of double ovariotomy and supra-vaginal hysterectomy already referred to amongst the ovariotomies. All were treated by the extra-peritoneal method. One patient, aged forty-three, died in thirty-three hours with acute suppression of urine. The liver and kidneys were found in a state of extreme fatty degeneration. Before the operation the specific gravity of the urine was only 1013, and there was a trace of albumen. But the sufferings of the patient were such—due apparently to cystiform degeneration—that I felt compelled to attempt her relief in the hope that the kidneys might not be too much diseased. But the urine became more scanty and more and more charged with albumen, and finally the secretion ceased with the advent of evidently fatal symptoms. The second, aged forty-six, also died with suppression of urine on the seventh day. On the fifth and sixth days the temperature was normal, but the pulse was 120 and there was albumen in the urine, which was still secreted in fair quantity. By the end of the sixth day, however, it became scanty, and within a few hours of death the kidneys quite ceased to act. These organs were large, soft, and slightly congested, and the capsules were adherent. The spleen was very soft and friable, breaking down like a blood clot. The third, aged forty-four, died on the sixteenth day. The posterior uterine wall was enormously hypertrophied, so that the diameter of the section measured over three inches, and at the post-mortem examination the lower segment of the uterus presented the appearance of cystiform degeneration, the contents becoming purulent. It will be observed that two of these cases were almost of the same age—a time of life when, in my experience, one is most likely to meet with latent kidney disease, which, as it were, springs a mine on the operator; for the evidence of this disease is not sufficiently definite to compel the surgeon to refuse operation, when other symptoms and signs seem to demand it.

Removal of the uterine appendages for disease.—In eleven out of the twelve cases the operation involved both sides on account of double disease—chiefly the result of inflammatory action, such as pyo-salpinx and obstruction and adhesion of the tubes. In one of these there was a large hæmato-salpinx on the right side, and occlusion and adhesion of the tube on the left. One case was remarkable for the coexistence of inflammatory obstruction of the tubes and cirrhosis of both ovaries, and this condition was characterised by persistent pain and intense dysmenorrhœa. Another case was remarkable for a healthy condition of the tubes and extreme atrophy of the ovaries, and characterised by persistent pain and complete absence of menstruation. The patient, in this instance, was a married woman, aged forty-four, the mother of two children. Menstruation did not return after the birth of her second child, eleven years ago. For three years after that she was troubled on and off with pain in the left groin, gradually becoming more continuous and severe. For some weeks she was in one of the general hospitals. For months at a stretch she attended the out-patient department of several hospitals. Finally, she came under the care of Dr. Amand Routh in the out-patient department of the Samaritan Hospital, and after prolonged treatment she was transferred to me on account of persistent pain in both groins, of such severity as to unfit her for the discharge of her household duties. The operation confirmed my diagnosis, for both ovaries were in a state of extreme atrophy. One, with its tube, weighed only 60 gr., and the other 65 gr., the greater proportion of these weights being contributed by the appendages. The result has been complete relief from the pain and the re-establishment of the patient's health.

Chronic ovaritis, with enlargement of the organ is represented in the case of a married woman, aged twenty-six, the mother of one child fifteen months old. Leaving her dying consumptive husband, whom she was no longer able to tend, she entered the hospital, seeking relief for persistent and severe pain in the left groin. Menstruation was irregular and scanty, and was both preceded (for two or three days) and accompanied with severe pain in the left groin and leg. The left ovary was readily felt on examination, large and prolapsed, and on exposure presented a white and glistening appearance. It weighed over ½ oz., and it was evident that ovulation had been completely arrested. There was also a small parovarian cyst as large as a hazel-nut. The right ovary and its tube were quite healthy, and were not removed. Relief was immediate, and in three weeks the patient returned home and nursed her husband till his death. She is now in perfect health.

Hydro-salpinx and chronic salpingitis were combined in one instance.

In two of the cases of double operation menstruation has not been arrested. One of these is a very remarkable case. The patient, an unmarried lady aged twenty-six, had suffered for many years from persistent pain and severe dysmenorrhœa, with somewhat irregular and scanty menstruation. The tubes resembled small sausages filled with caseous matter, and were very adherent. They were removed close to the uterus along with the ovaries. Menstruation is now very regular, *and quite painless*, and the flow is more abundant and more healthy in character than she remembers it. The operation was performed in October, 1885. The second case is that of a single lady aged twenty-six, who had suffered from pelvic pain for several years, as the result of being upset in a cab. For three months she had been under treatment by rest, &c. Menstruation was very painful; the uterus was in a state of retroversion + flexion, and she had become subject to attacks of trembling of a distressing character, which were very readily induced by any interference with the uterus. I first saw her in consultation with a distinguished obstetrician, who had exhausted all his resources in his efforts to relieve her. The result of the consultation was the decision to recommend the removal of the appendages. What that involved was explained in all its bearings, and the patient at once—that is, within twenty-four hours—assented. The version and flexion were removed by the operation. Menstruation returned after the usual interval, but was painless.

Of the twelve cases two died, one on the fourteenth day and the other on the eighth. In the first case the operation was a very difficult one, from adhesion of the omentum to the parietes in the line of incision and to the uterus and brim of the pelvis, and from adhesions of the tubes and ovaries. For six days the patient went on most satisfactorily, the temperature never exceeding 99·8°, and the pulse for the greater part of the time beating 84. At the end of this time she was moved to the convalescent ward—i.e., on the seventh day,—where she developed a severe attack of catarrhal jaundice, which continued to the end. The second case was that of a single woman aged twenty-nine, who had been an invalid for three years, and had undergone a great variety of treatment. For thirteen weeks she had been in a country hospital without relief. When she first came under my notice I refused to operate, as there was nothing to be detected but the slightly enlarged and tender ovaries, especially the left. After five months' further treatment the persistent and disabling pain from which she had so long suffered was in no degree relieved, and she was admitted into the hospital, for the second time, in May, 1886. Both ovaries were affected with chronic ovaritis, and the right was beginning to atrophy. In neither was there any evidence of recent ovulation. There was no difficulty in the operation, but there was very free bleeding from the parietes. On first removing the dressings on the fourth day, it was seen that there had been rather severe bleeding from the middle of the wound, where one of the sutures had slipped from cutting off one of the ends of the suture too short, and between the lips of the wound there was a considerable blood clot. On the seventh day, owing to unfavourable symptoms supervening, and finding that a probe passed from the hæmatoma into the peritoneal cavity, I opened up the lower portion of the wound including the blood sac, and found some dark fluid in the lower abdomen and pelvic cavity. This was well washed out with warm water, and a drainage-tube inserted; but it was too late, for the patient died on the following day. It was quite evident that the fatal result was due to hæmorrhage from the parietes, occurring before the peritoneal surfaces had united.

Removal of the uterine appendages for fibroma.—During the last eighteen months I have only seen two cases in which I have felt justified in proposing this operation.

Many cases have been under my observation, and in all I have been able to afford relief either by intra-uterine medication or by constitutional treatment. Whether any of these may ultimately require more active interference remains to be seen. Of the three cases operated on, the first was that of a married woman, who had a multiple fibroid mass of about 1 lb. or 1½ lb. in weight springing from the back of the uterus by a thick and very vascular pedicle, besides quite a colony of small fibroids growing on the fundus. I should have preferred to remove the mass, but the pedicle was too thick and vascular for the ligature, and was in such a position that its extra-peritoneal treatment would have been exceedingly difficult—rendered more difficult by the presence of the numerous small growths, sticking, as it were, on the fundus; so that I had to carry out my first intention by removing the appendages after replacing the mass. The final result is, of course, not yet known. In the second case the condition of things was very obscure, and from the pain felt in the left ovarian region, as well as the physical signs, I believed I had to do with a case of disease of the appendages. The abdominal section revealed several small fibroids in the uterus as the cause of the menorrhagia, and a cancerous mass of small size over the sigmoid flexure. I removed the right appendages, but the left were so closely attached to the cancerous mass that I dared not interfere with them. The patient recovered without a single drawback, and went home in three weeks. In the third case the patient was a single woman aged forty-two, who was in a state of extreme anæmia from menorrhagia due to intra-mural fibroids. Both pedicles were very short, and on the left side the sigmoid flexure was very much dragged upon when the ligatures were tied. This patient died on the fourteenth day with symptoms of gradually increasing obstruction, having progressed most favourably for the first six days.

(To be concluded).

APHONIA DUE TO SUBGLOTTIC GROWTH (? CONGENITAL); OPERATION; CURE.

BY G. A. CARPENTER, M.B. LOND., M.R.C.S., &c.,
REGISTRAR AND CHLOROFORMIST TO THE EVELINA HOSPITAL FOR CHILDREN.

LOUISA B——, aged eighteen, brought a patient to the Evelina Hospital on April 19th, 1886, and the resident medical officer, Dr. Albert Martin, noticing that she herself was almost voiceless, asked me to make a laryngoscopic examination. She stated that she had been told that "her cry when a baby was a peculiar one," and that she had been only able to speak in a whisper up to the age of ten years. She then went to a boarding-school in the country; her voice became hoarse about that time, and since then has always remained in the same condition. When fourteen years of age she sought advice from a chemist, who stated that there was no cure for her complaint, but that she "might grow out of it." (See engraving.)

On making a laryngoscopic examination, a pedunculated tumour about the size of a split pea, with somewhat elongated pedicle, of a pink colour, and lobulated surface, was seen situated at the anterior commissure. The pedicle of the tumour disappeared under the right vocal cord, and was apparently attached just below it, near its junction with the thyroid cartilage, and arising from the latter. During respiratory movements the tumour moved backwards and forwards with the current of air, now appearing above the cords, and now descending into the subglottic region, almost out of sight. The breathing space was diminished by about a fifth during expiration. There was no dyspnœa. The vocal cords were slightly injected, and during attempts at phonation could not be approximated on account of the tumour wedging itself between their anterior attachments. Movements of abduction were perfectly free. The patient was directed to attend for treatment on April 23rd.

April 23rd.—Tumour easily visible. The larynx was painted with a solution of cocaine, fifteen grains to the ounce, and an attempt made to grasp the growth with Mackenzie's forceps, but without success, partly owing to the broad shank of the forceps blocking the view in the laryngeal mirror, and partly to difficulty experienced in getting the blade well into the narrow commissure, the space afforded being too narrow to accommodate the forceps. After several attempts, it was seen that, owing to the above reasons, the growth could not be seized, and the patient was ordered vapor benzoini for inhalation, and told to attend every other day in order that she might accustom herself to the use of instruments, the introduction of which could not at first be tolerated.

May 4th.—On this date the patient again attended for operation. My friend, Dr. Albert Martin, since the 23rd ult., had been practising her with instruments without cocaine; and so efficiently had this been performed that she could now without difficulty tolerate their use. The larynx was painted with a solution of cocaine, fifteen grains to the ounce; and about ten minutes after its application the tumour was grasped at the first attempt with Mackenzie's tube forceps and removed with ease. It presented a lobulated appearance, was of a pink colour, of fairly soft consistence, and had apparently come away in its entirety. In consequence of the amount of blood about the parts, it was impossible to see whether its removal had been completely accomplished. Its structure seemed to be of the nature of a soft fibroma. Shortly after its avulsion the patient spoke comparatively clearly. Vapor benzoini was ordered for inhalation, and she was directed to attend again the next day.

5th.—Laryngoscopic examination shows no trace of the growth. The vocal cords approximate completely in the mid line, and the patient speaks in a natural voice, much to her delight. As there is some injection of the cords, the patient is to attend daily for a week for topical applications of chloride of zinc, fifteen grains to the ounce.

12th.—The vocal cords are of normal colour now, and the larynx is healthy in every respect. Unfortunately, owing to the small growth being mislaid amongst many pathological preparations, the microscopical appearances of the tumour cannot be given.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

CHARING-CROSS HOSPITAL.

STRANGULATED CONGENITAL HERNIA WITH RUPTURE OF THE INTESTINE; HERNIOTOMY; ENTEROPHY; CURE; REMARKS.

(Under the care of Mr. BARWELL.)

THE peculiarities in the subjoined case were: The unusual length and obliquity of the canal (this resulted from the very recent date of the hernia allowing of no time for the usual approximation of the internal to the external ring); the number of bands running across the intestine within the funiculus of the tunica vaginalis and the tension of the rings themselves, the early rupture being doubtless due to these causes; the edges of the rent had the appearance of being more than twenty-four hours old; the extreme ease with which recovery took place; the remarkable appearance of the natural healing process by the production of a beautifully opalescent and transparent layer of lymph creeping over and covering in the sewn-up rupture. It is

rare that so good a view of a reparative process can be watched in the human subject.

T. B——, aged twenty, was admitted on Nov. 13th, 1886, at 11 P.M. The patient is unaware of having had any rupture as a child, but at Christmas last a swelling suddenly appeared in his groin and scrotum. This was accompanied by dragging pain in the abdomen and a sense of sickness. A week ago he jumped from a cart and immediately felt a pain in the groin and testicle, and found considerable swelling in that neighbourhood. Soon after he was sick. Next day and again a day or two after, he tried to work, but was unable to do so, and has been several times sick, more especially during this day. The bowels have not acted since the accident.

Mr. Barwell being sent for, he saw the patient shortly after admission. He had a small weak pulse; the skin was cool and somewhat clammy. He complained of much pain in the scrotum, groin, and umbilical region. He had not been sick since admission, nor had he hiccough. The hernial swelling distended the inguinal canal and the scrotum very considerably; it was very tense and tender; the skin over it was red. Herniotomy was at once performed. The sac was reached without difficulty and opened; within it was nothing but a much distended and congested coil of intestine, which lay in contact with the testicle. The external ring was excessively tense; when this was incised the inguinal canal was not found shortened, as is commonly the case with large herniæ, but was of normal length and obliquity. A little inside the ring, the gut showed a more excessively congested patch, running across which was a rupture about half an inch long and ragged, the edges of mucous membrane that protruded being ulcerated. After several bands in the inguinal canal had been divided, and the very tense internal ring incised, it became possible to draw that part of the intestine into better view. The opening was closely stitched, after Lemberg's method, with fine catgut. A stitch was passed through the peritoneal and partly through the muscular coat, a little beyond the highly congested part, and left long, so as to hang from the wound; then all the gut was returned from both ends, leaving the ruptured and sewn part bare, just at the mouth of the ring. This was covered with a double layer of protective, and the whole was dressed with carbolised gauze. Ordered half a grain of opium every fourth hour.

Nov. 17th.—The patient has had no disquieting symptom. Over the ruptured intestine, and covering in the stitches, was a layer of lymph. The highest temperature was 99·8°.

19th.—The temperature rose to 102·4°. On examining the wound the scrotum was found distended, and a little dark blood was found to come from one part near a stitch. The incision here (the front of the scrotum) was opened, and a dark clot turned out. No bleeding point could be discovered, and the wound was closed again.

Dec. 20th.—With the exception of the oozing above mentioned, which did not recur, the patient has had no bad symptom. The wound was rather slow of healing, but he has been practically well for several days.

NEWCASTLE-ON-TYNE INFIRMARY.

DIFFUSED TRAUMATIC ANEURYSM OF THE ANTERIOR TIBIAL ARTERY OF TEN WEEKS' DURATION; ATTEMPTED LIGATURE; AMPUTATION.

(Under the care of Mr. PAGE.)

THE following notes are by Mr. F. P. Maynard, M.B., house-surgeon.

John M——, aged sixteen, was admitted on Nov. 18th, 1886, with the following history: On Sept. 13th, while staying with some friends in Lancashire and playing with other boys, one stabbed him with a penknife (blade two inches long) in the left leg, at the junction of the middle with the lower third, about half an inch outside the crest of the tibia, in a direction backwards and inwards. It bled freely, spurting out (not in jets) dark blood, he says. The leg swelled. He was sent to bed and poultices applied. Four days after, on getting up, he had pains in the leg, and the swelling increased a little. The wound healed, the swelling remained, and on Oct. 4th he returned home. The next day suddenly great pain came on, and the swelling again increased. It was poulticed, and a fortnight later his doctor opened it, when much blood clot was removed, and a few drops of fetid pus. The bleeding, which was considerable, was stopped by pressure. It bled at intervals until Nov. 17th, the day before admission, when free hæmorrhage took place.

On admission the boy was very anæmic and emaciated, with a poor pulse and no appetite. The lower and half of the middle third of the leg were occupied by a swelling about eight inches in length, uniformly fluctuating and soft; and situated about its middle was a small wound, from which blood was oozing, a drop at a time. This swelling communicated distinctly with a similar but smaller one behind the inner side of the tibia. Both were without pulsation. Pulsation was absent in the anterior tibial artery below, but present in the posterior tibial. The foot was œdematous. Pressure was applied and the oozing stopped.

Nov. 24th.—Hæmorrhage occurring, under chloroform Mr. Page enlarged the opening and cleared out about one pound of blood clot, with a tourniquet on the femoral. The anterior tibial artery could not be found, but two or three bleeding venous points were tied, and afterwards one small artery, and the bleeding stopped. The posterior portion of the sac was also opened, but nothing found to tie. The tibialis anticus was completely split up and separated from the tibia, which in one place, the size of half a crown, was eroded, and the interosseous membrane was wanting for several inches. There were no signs of suppuration anywhere except at the old incision. The leg was elevated and dressed, and permission for amputation obtained should it be necessary. At night the bleeding recurred, and the leg was amputated through the middle third by lateral flaps (Bryant's), so as to utilise the incisions previously made into the aneurysm, and the flaps brought together by a continuous catgut suture.

The leg did well, except that pus collected over the inner side of the end of the tibia, and the patient was allowed to go out on Dec. 12th. On the 15th oozing of blood came through the incision. At 10 P.M. excessive bleeding took place, and, under ether, Mr. Maynard opened up the stump, having to cut through firm cicatricial tissue, turned out the clot, and tied some bleeding points, only one of them arterial, and that a small vessel. As the end of the tibia was necrosing, a piece of it was sawn off, some unhealthy granulations scraped, and the flaps sutured. After operation the patient was much collapsed, and rallied slowly.

Jan. 20th, 1887.—Patient has recovered uninterruptedly, gaining flesh rapidly.

Feb. 8th.—A small exfoliation has come away from the tibia. The size of a small button.

25th.—Wound all but healed. Is going to a convalescent home.

EPITHELIOMA OF THE SOFT PALATE.

(Under the care of Mr. PAGE.)

The notes of this case are also furnished by F. P. Maynard, M.B., house-surgeon.

E. D——, aged twenty-seven, a fireman, was admitted on Oct. 7th, 1886. Family history good; habits good, and no history or sign of syphilis. Last April he felt with his tongue a small projection on his soft palate. It grew slowly, and when as large as a pea it was snipped off by his doctor. The wound healed badly, and when admitted there was a small cicatrix in the middle line of the soft palate. At its left border was a small growth the size of a small pea, exactly like an ordinary gonorrhœal wart in appearance. There was a small gland enlarged on the right side of the neck in front of the sterno-mastoid.

The patient was treated with large doses of iodide of potassium, and with mercury, without effect. The growth therefore was scraped off, but, strange to say, a similar one appeared on the other side. The whole of the disease was freely removed on November 9th with the knife, removing the whole thickness of the palate. The wound did not heal well, and the disease returned in it within a month, and the gland in the neck enlarged rapidly. He went home on December 23rd.

On Feb. 1st the man came again to the hospital. The whole of the right two-thirds of the soft palate was a mass of foul epithelioma, which had spread down the right arch to the tonsil, which was itself a mass of disease. He had lost flesh, and looked very ill and anæmic. The gland in the neck had enlarged, and was now as large as an orange; it was adherent to other enlarged glands. They were still encapsuled, but under the sterno-mastoid.

WOLVERHAMPTON AND SOUTH STAFFORDSHIRE GENERAL HOSPITAL.

RUPTURE OF THE POPLITEAL ARTERY AND VEIN; AMPUTATION; REMARKS.

(Under the care of Mr. VINCENT JACKSON.)

WE are indebted for the following notes to Mr. J. Harley Gough, house-surgeon.

On Nov. 24th, 1886, at midday, T. L——, a miner, aged twenty-one, was working down a coal-pit, when a quantity of rock and gravel fell on his back and right popliteal space. He was knocked down, and remained unconscious for some minutes. When pulled out of the débris the back of his right knee immediately began to swell, the swelling rapidly extending up the thigh and down the leg. He had severe pain in the limb for some hours, but it gradually became easier.

On admission the next day, the right leg and thigh were greatly swollen, hard, tense, elastic, and shining, from about two inches below Poupart's ligament to the toes. The swelling was especially marked in the lower half of the thigh, back of knee, and calf, as the following measurements will show:

	Round calf.	Over patella.	4in. above patella.
Sound limb	11¼in.	12⅜in.	15¼in.
Injured limb	15in.	17in.	17in.

There was considerable ecchymosis behind the knee and upper part of the calf. The foot and leg were much colder than those of the opposite side, and sensation was blunted. The foot was of a darkish-purple colour, reaching as high as the ankle. Patient did not complain of pain except when the leg was moved. No pulsation could be felt in the popliteal space or in the arteries below. There was no fracture or dislocation. The man was very anæmic; pulse weak, but regular, 110. Tongue clean. The patient was put to bed and the limb enveloped in cotton-wool, elevated, and hot bottles put to the foot and leg.

Dec. 1st.—The condition of the limb remains much the same. The patient has some pain in the knee at times, which is relieved by opiates. The foot is quite cold, and is getting darker in colour. Pulse 120; temperature 99·8°.

4th.—The foot and lower part of the leg are distinctly gangrenous. The temperature has been slowly rising for the past few days. The swelling of the limb has neither increased nor diminished. Amputation was deemed advisable, and the patient having consented, the limb was removed about three inches above the condyles of the femur by means of long anterior and short posterior skin flaps. The subcutaneous tissues and inter-muscular spaces were filled with dark clotted blood. The femoral artery was patent, and did not contain a clot.

After the operation the patient suffered much from collapse, but towards evening recovered; he had a good deal of pain, which was relieved by morphia. The wound was dressed twice daily for some days, on account of the discharge. The stump slowly became less in size and softer, and on Dec. 24th he got up for the first time. The patient made a good recovery, and went out convalescent on Jan. 26th, 1887; he would have gone home sooner, but, unfortunately, fell on the end of his stump some days before.

Examination of the limb.—After the operation the limb removed was dissected, and a transverse rupture of the popliteal artery and vein was found, the ends being separated for an inch and a half. The seat of the rupture was about the centre of the popliteal space. The proximal and distal ends of the artery were retracted in their sheaths and occluded. The ends of the vein were patulous. The popliteal nerve was intact, and apparently not injured. The posterior ligament of the knee-joint was torn through, and the joint was filled with semi-clotted blood. Extravasated blood was found everywhere between the muscles and also subcutaneously, the subcutaneous layer being more than half an inch thick in places.

Remarks.—Rupture of the popliteal artery and vein without external wound is a rare injury, only very few cases being recorded. Complete rupture of the artery alone is uncommon, but occurs more frequently than rupture of both vessels. The signs and symptoms are much the same in both cases—viz., rapid swelling of the leg and thigh, no pulsation in the popliteal space or in the vessels below, and coldness of the limb. There are two lines of treatment: (1) Ligature of the ruptured ends of the vessel or vessels; (2) amputation of limb. In the first method it must be difficult to apply a ligature to the torn ends of the artery, and even when done the circulation may not be established, owing to the pressure of the extravasated blood on the collateral branches, although tension may be considerably lessened by incisions. Experience shows that amputation of the limb is followed by the best results, and this should either be done as early as possible or when gangrene becomes evident, and without waiting for the line of demarcation. Ligature of the femoral is obviously of no use in these cases.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Gouty Parotitis and Gouty Orchitis.—Empyema, with Pulmonary Gangrene, following Enteric Fever, treated by Perflation.

AN ordinary meeting of this Society was held on March 8th, 1887, Mr. G. D. Pollock, President, in the chair.

A paper on Gouty Parotitis and Gouty Orchitis, by Dr. DEBOUT D'ESTRÉES of Contrexéville, was communicated by Dr. Garrod. The object of the paper was to fill a lapsus in the literature of gout, in so far as this disease affects the glandular system, more especially the parotids. There are genuine attacks of gout having their seat in the glands and alternating with articular manifestations. The following case was related: X——, aged sixty-eight, a well-marked gouty subject, was suddenly attacked with swelling at the angle of the jaw, which resisted ordinary treatment, and only disappeared on the invasion of the knee on the opposite side. The second parotid and the other knee were also attacked subsequently. Some little induration of the parotids remained, together with salt taste in the mouth, due probably to the presence of urates in the saliva secreted by these glands. Similar cases by Drs. Garrod and Rotureau were also referred to. These cases were promptly relieved by a tincture of fresh colchicum flowers, fifty drops thrice daily. The author had only seen two cases of gouty orchitis, which, resisting treatment, subsided spontaneously on the appearance of gout elsewhere. The left testicle is most frequently affected, but not invariably. He had not seen it in both parotid and testicles in the same patient.—The PRESIDENT had never seen parotitis in association with gout, but had met with cases of orchitis in men of advanced life who were the subjects of articular gout.—Sir DYCE DUCKWORTH thought that gouty parotitis must be a great rarity. Sir James Paget had remarked on the great immunity of the lymphatic tissues from gouty inflammation. He considered that the correctness of the diagnosis was proved in these cases by the effect of the treatment and by the fact that the inflammation of the parotid gland or testicle alternated with articular pain.—Mr. STEPHEN PAGET quoted cases which showed that there was an association of parotitis with dyspepsia and abnormal nervous symptoms. He asked whether it was possible that the parotid lesion could be aided by a faulty state of the gland induced by a condition of chronic dyspepsia.—Dr. BERNARD O'CONNOR referred to a case under his care of gout associated with swelling of the sublingual glands.—Dr. GARROD had collected 2000 cases of gout, but there was not one with a history of parotitis. He had since met with a case—a man of sixty-five, a gouty subject, who was attacked with acute inflammation of both parotid glands—which subsided without suppuration. He thought that cases of suppurative parotitis could not be of true gouty character. He had seen many cases of orchitis in which the swelling vanished on the appearance of arthritic gout.—Dr. D'ESTRÉES, in reply, said there was a slight dyspeptic history in his patient. Some saliva examined during the attack was acid, and gave a murexide reaction. Since he had written his paper he had heard of another case, under the care of Professor Damaschino of Paris, in which the primary gouty manifestation occurred in the parotids. The cases might induce surgeons to employ medicinal means before resorting to operative interference.

Dr. WM. EWART and Mr. R. FITZROY BENHAM read a case of Empyema with Pulmonary Gangrene following Enteric Fever, treated by Perflation. The patient, a male, aged ten years and eleven months, was seized with enteric fever (due

probably to drain infection) on April 23rd, 1886. The symptoms were not unusual in character, but severe in degree, especially the delirium. The treatment adopted by Mr. Benham consisted of quinine, which proved ineffectual, and of antipyrin, which appeared to relieve the pyrexia and the delirium. The patient was convalescing at the end of the fourth week, when peritonitis supervened, soon followed by left pleuritic pain. Within a week the signs of left empyema were fully developed, the exhaustion was extreme, and the dyspnœa bordered on asphyxia. On June 11th aspiration was made, and three-quarters of a pint of thick shreddy pus removed, with relief of the most urgent symptoms. The following day the chest was opened freely in the anterior axillary line (fifth space) and in the scapular (ninth space), a large quantity of pus escaping. Free discharge continued, but no injection was used. On June 15th perflation was performed under spray in the manner depicted in THE LANCET (July 31st, 1886), the appliances being elastic tubing, a Woolffe's bottle containing carbolic acid solution (1 to 10), and a hand-ball bellows. The air was delivered into the centre of the chest through the anterior opening, and allowed to escape only at the posterior. The result was the expulsion of fetid pus, of a piece of necrosed lung, and of heavy false membranes. A smaller mass of membrane was expelled by perflation the next morning, and a small piece on the third day. From this day the fetor ceased, and the amount of pus decreased rapidly. On the eighth day the discharge was turbid-serous, and it remained serous to the end. Both wounds were closed on the thirtieth day from the date of incision, and on the twenty-fourth from the first perflation. Among the advantages obtained in this case by the method employed were the following: 1. Early removal from the chest of putrid residues. 2. Presumably considerable shortening of the period of suppuration as a result of (1). 3. Avoidance of permanent atelectasis and of eventual resection of ribs as a result of (2). 4. Avoidance of deformity as a result of (3). 5. Daily dressings free from discomfort and from wet (excepting the spray). 6. A drier state of the cavity and of its coverings than is allowed by fluid injections, with absolute sweetness of the discharge.—The PRESIDENT asked what was the advantage of perflation over free incision at the most dependent part, with, if necessary, excision of the rib.—Sir DYCE DUCKWORTH believed the practice of washing out the pleura was a mischievous one. He would use perflation in future in that class of cases where, having made a free opening with antiseptic precautions, the patient did not progress satisfactorily.—Mr. GODLEE thought the case peculiar, in that a piece of gangrenous lung was discharged without a history of previous fetid expectoration. He considered that a free opening posteriorly without perflation would have met the needs of the case. Injecting the pleura was a mode of treatment now passing out of fashion. In cases requiring it, he recommended blowing iodoform into the pleural cavity with an insufflator.—Mr. BENNETT inquired what was the result of treatment in adults and in those cases which, previous to its use, had not done well. He could not recommend its adoption in general surgery, for in one case in which he perflated an abscess in the thigh, he produced extensive subcutaneous emphysema.—Mr. R. W. PARKER had published a paper in the Society's Transactions many years ago advocating a similar method to this. He had abandoned injection, and made a single large opening, into which a double drainage-tube was passed.—Dr. DAWTREY DREWITT likened perflation to the schoolboy practice of "blowing" an egg, and pointed out the difficulty of separating the inner membrane from the shell by that method.—Mr. HOWARD MARSH said he adopted the following method of evacuating an empyena:—First make an opening high up; from this pass a catheter, and feel the lowest part of the pleura; then make a large opening at this lower point, and allow the upper one to close. He believed washing out the cavity was not advisable, and, indeed, unnecessary. He objected to the insufflation of iodoform, which, he thought, might act as a poison. In excising a rib, if the periosteum were left deformity would be avoided.—Dr. SANSOM said the air would not be sufficiently purified by being blown through water. He advocated passing the warmed air over blotting-paper, cotton-wool, or sponge, saturated with pure carbolic acid.—Mr. PEARCE GOULD thought the value of the method could scarcely be judged from one favourable case. He considered the best treatment was a single free opening in the sixth or seventh interspace, and in the post-axillary line.—Dr. EWART, in reply, agreed as to the value of a large opening. He believed perflation useful in recent empyema to discover whether loose pieces were present. In older cases it might be beneficial by effecting the removal of an irritant. He had treated five cases of left-sided empyema, and perflation in them had produced no effect on the heart. In using this method in general surgery care should be taken to have free openings, so as to avoid undue pressure.

PATHOLOGICAL SOCIETY OF LONDON.

Adenosarcoma of Tongue, with Calcifying Nodule in Centre.—Alveolar Sarcoma.—Malarial Diseases of Liver and Spleen.—Extra-uterine Pregnancy.—(?) Cirsoid Aneurysm.—Cholesteatoma at Base of Brain.

AN ordinary meeting of this Society was held on the 3rd inst., Sir J. Paget, Bart., F.R.S., President, in the chair

Mr. R. J. GODLEE showed a specimen of Adeno-sarcoma of the Tongue, with ossifying (? calcifying) nodule in the centre. It was a hard nodule of the shape and size of a small pisiform bone, and having the appearance of bone, removed from the centre of a tumour on the under surface of the tongue near the tip. The patient was a woman aged twenty-four, a patient of Mr. S. N. Bruce. The tumour had only been noticed five weeks, and had already sloughed over an area the size of a shilling on the under surface, through which the hard mass was removed with a sinus forceps. Some weeks afterwards the tumour was excised with scissors. The growth was an adeno-sarcoma, the sarcomatous tissue being abundant and highly vascular, and the adenoid tissue arranged in acini of varying size lined with square epithelia. The acini were in parts dilated into small cysts containing a brownish structureless material, in which were nuclei (? leucocytes). The hard mass on section had roughly the appearance of imperfectly formed bone. Mr. Godlee suggested that the tumour, which he believed to be unique, was connected with a mucous gland from 7 to 10 lines long, described by Nuhn in 1845 and by Blandin at an earlier date, in this situation lying beneath a few fibres of the styloglossus. A specimen of this gland, prepared by Mr. Pearson at the College of Surgeons, was shown. It was pointed out that the presence of bone would be very remarkable, but it was added that the microscopical examination was not unequivocal, and that it might, after all, be merely a mass formed by a cretaceous or calcareous change in the contents of one of the cysts contained in the tumour.—Mr. STEPHEN PAGET observed that the tumour seemed to be very similar to some tumours found in the palate. In the age of the patient, the chronic course of the disease, the superficial ulceration and calcification, he saw points of resemblance. He thought such a case might be explained on the hypothesis that there were vestiges of gland tissue in the tongue as well as in the palate.

Mr. G. R. TURNER read a case of Alveolar Sarcoma. The tumour grew in the left loin of a man, aged twenty, and proved fatal seven months after it was first noticed. Its connexions were such as not to admit of removal. It sprang from the bone of the twelth rib, from the periosteum of the transverse processes of all the lumbar vertebræ, and from the crest of the ilium below. It was not encapsuled, and had extended inwards, almost surrounding the aorta and inferior vena cava, completely enclosing the left common iliac vessels, converting the pancreas, lumbar glands, and psoas muscles on the left side into masses of new growth. Secondary deposits were found in connexion with the diaphragm, omentum, mesentery, meso-colon, and pleura. Microscopical specimens and drawings by Dr. Délepine were shown. The tumour was a well-marked instance of alveolar sarcoma, the cells being chiefly oval or pyriform; the stalk of the latter could be seen to be continuous with the fibrillated septa of the stroma. The diaphragmatic growth showed the muscle fibres separated by an alveolated stroma containing cells. And the same appearances were observed in the secondary pulmonary growth. Reasons were given for regarding the growth as sarcomatous rather than carcinomatous, and the relations of lymphadenoma with alveolar sarcoma were discussed. In reply to Dr. Norman Moore, Mr. Turner said the suprarenal body was not invaded; the growth passed behind the left kidney, but neither it nor the suprarenal body was involved.

Dr. NORMAN MOORE showed specimens of Malarial Disease

of Liver and Spleen, with Tuberculosis. A greatly enlarged spleen weighing 60 oz., and a liver weighing 120 oz. Naked-eye sections of the spleen showed numerous white specks throughout it, and there were some larger masses which had become caseous. None of the masses had injected edges. The liver contained many similar small white masses. The whole peritoneum was covered with similar masses, some of them caseous. The mesenteric glands were caseous. There were some small caseous masses in both kidneys. A layer of caseous material, a quarter of an inch thick, surrounded the upper part of the rectum. In all the lobes of the lungs were scattered groups of masses exactly resembling those in the liver. One abdominal caseous gland had broken down in the middle. Under the microscope the masses in the liver and spleen were seen to consist, some merely of caseous material, others of collections of small cells, some near bloodvessels, others in the midst of the gland tissue. Besides the small round cells, a few multinucleated cells could be seen in some of the masses, but no true giant cells. After several examinations no bacilli were found. The liver showed some general connective tissue increase. The spleen showed collections of cells precisely resembling those in the liver, and also many pigmented patches, a large connective tissue increase, a general infiltration by blood-cells resembling that seen under the microscope in nutmeg liver. The patient was a man aged twenty-one years, who was in St. Bartholomew's Hospital, first under Dr. Moore's care and afterwards under Dr. Andrew. He had worked on a railway in Cape Colony from 1880 till 1884, and in 1883 was laid up for a year with tertian and quotidian ague. He went to Ceylon, and had dysentery on the voyage. From 1884 he had noticed his greatly-enlarged spleen. After returning to England he had fever again. He had never had syphilis. He was admitted to St. Bartholomew's Hospital on Nov. 26th, 1885, and died Jan. 21st, 1887, having been out for a short period during his illness. He suffered from an irregular fever, for two months had a temperature suggesting quotidian ague, then two months of almost normal temperature, then daily fever for a week, then six weeks of normal temperature, then fever again. He improved under very large doses of quinine, thirty-five grains every twenty-four hours, and his spleen was perceptibly reduced in size. The proportion of white blood-corpuscles to red was throughout about one to five. The history of malarial infection, and the appearance of the liver and spleen, make it certain that the chronic inflammation is that form of cirrhosis due to intermittent fever. The large quantity of caseous material in the glands and the distribution of the white masses over the peritoneum are strong evidence that the white masses in the liver and spleen are true tubercle. Gummata they are not. They resemble of course leukæmic tumours, but their caseous degeneration as well as their distribution seem to negative the hypothesis that they belong to this class. They are tubercles invading viscera already affected by long-lasting changes due to malaria.—Dr. COUPLAND remarked upon the very high degree of leucocytosis present in this case; he would almost have been inclined to regard the case as one of leucocythæmia. Was it usual in malaria to have so large an increase of white corpuscles?—Dr. G. N. PITT thought the association of diseases in this case resembled that seen in hypertrophic cirrhosis of the liver. He had seen several cases in which acute tuberculosis terminated cirrhosis.—Dr. GOODHART thought that a fair proportion of cases of leucocythæmia supervened on malaria. Enlargement of glands or lymphatic leukæmia was often present also, and the complication of tuberculosis was not unknown. He thought these mixed cases were related, and could be traced to malarial poisoning. —Dr. MOORE, in reply to the President, stated that the red corpuscles were normal. He quite admitted the unusual proportion of white corpuscles, but could not explain the appearances on any other hypothesis than that of tuberculosis. He had seen four cases of malaria with leucocytosis, and had seen true tuberculosis supervene upon malaria.

Mr. LAWSON TAIT read a note on the Pathology of Tubal Pregnancy. The views on extra-uterine pregnancy which were first advanced by him at the Obstetrical Society in 1873 were immediately characterised by Dr. John Perry as having at least the merit of simplicity. Many post-mortem examinations and thirty-four clinical cases operated on by him, the remarkable observations of A. Johnstone and Bland Sutton that the inner surface of the uterus and tubes is affected by menstruation, supported those views. He regarded the periodic desquamation and turgescence of the endometrium as essential to the retention of a fertilised ovum, and that is why it is that we have to reckon pregnancies from menstrual dates. He suggested that the starting-point of menstruation—not the cause—lies in the Fallopian tubes. This view is sometimes erroneously called Tait's tubal theory of menstruation. Removal of tubes without the ovaries will in the majority of cases arrest menstruation; the only conclusion is that the tubes have far more to do with menstruation than the ovaries. The ciliary action of the tubal mucous membrane prevents the access of spermatozoa, and aids in the passage of the ovum. The effects of desquamative salpingitis would be to allow the spermatozoa to enter, and would lead to the retention of the ovum in the tube. The tube might thus retain a fertilised ovum and become distended by its growth. Rupture always occurs about the end of the third month. The primitive facts of anatomy explain the rest of the pathology of this interesting displacement. The preparations the author has examined at the time of rupture show that the meso-salpinx is practically obliterated by the separation of its layers, just as the broad ligament is obliterated by the growth of a broad ligament cyst or the occurrence of a broad ligament hæmatocele. The tube inevitably ruptures, and the site of the rupture is the leading feature, not only of the future pathological changes, but of the clinical progress and treatment of the case. The site of the rupture is determined by the seat of the placenta, and if the rupture takes place at any part of the tube covered by peritoneum, extravasation takes place into the peritoneal cavity, forming a tubal intra-peritoneal hæmatocele. If, however, the rupture takes place at a point in relation to the cavity of the broad ligament, the hæmorrhage takes place into the cellular tissue, this fact being alone sufficient to aid materially in arresting the quantity of the hæmorrhage; also into a cavity which is not indefinitely capable of extension. We have in this case the broad ligament pregnancy which formerly was known as the "grossesse sous-peritoneo-pelvienne" of Dezenneris. The relation of the area of the broad ligament site to the seat of rupture which corresponds to the peritoneum makes it certain that the latter will be much more frequent than the former, and clinical evidence establishes this fact. Tubal rupture into the peritoneum will be almost inevitably fatal to the mother, and therefore certainly fatal to the child. Indeed, we have only one indubitable case in which a fatal issue has not taken place, and that is the celebrated case recorded by Jessop, of Leeds. Tubal rupture into the broad ligament, on the contrary, is probably very rarely fatal. The majority of the ova die before they reach maturity; after death takes place they become absorbed. In other cases the ovum dies during the middle months of pregnancy, and it is found after death as a lithopedion, or it may suppurate and discharge above the brim of the pelvis into the bladder or rectum. In a few cases it goes on to maturity; a false labour ensues, in which the child may be removed by abdominal section, an operation in which it is not necessary to open the peritoneal cavity. It will thus be seen that the pathology of extra-uterine pregnancy is made extremely simple by these views, and they explain all the varieties that are known, bringing them absolutely within two categories, and from these pathological facts the rules for surgical proceedings can be very easily laid down. — Mr. DORAN observed that the true pathological question suggested by Mr. Tait's paper was the relation of inflammation of the tube to extra-uterine pregnancy. Disease of the tubal mucous membrane was very common, as the tubal canal communicated with the exterior through the uterus and vagina, and was thus liable to septic infection and to extension of inflammatory affections from the uterus. If, then, this "desquamative salpingitis" rendered the patient liable to tubal pregnancy, that form of pregnancy ought to be very common. Freund's theory that a large proportion of tubal pregnancies ended by early arrest of the development of the fœtus and disappearance of all objective and subjective symptoms would account for the discrepancy suggested by the great frequency of tubal disease and the apparent relative rarity of tubal pregnancy.—Dr. MOORE asked whether there were any specimens in illustration of the paper, and whether the diagram was only a diagram or represented a particular case.—Dr. W. S. A. GRIFFITH thought that, without an examination and criticism of specimens, the evidence in support of Mr. Tait's views was

not incontrovertible; the drawings were diagrams, and not representations of facts. In reference to the rupture in tubal pregnancy taking place at the side of the placenta, he reminded Mr. Tait that this structure was not differentiated till after the third month of gestation. He had a month previously brought forward the first recorded case of salpingitis as a cause of extra-uterine fœtation (THE LANCET, p. 268).—Mr. LAWSON TAIT, in reply, said that one of the drawings represented a particular case; the other was a diagrammatic representation of the parts seen in a case he had operated upon. He was glad to hear of Freund's views, as they confirmed the impression he had been arriving at that tubal pregnancy was common. In reference to the placenta question, he was frequently engaged in removing pieces of placenta before the third month of gestation; they were usually infiltrated with blood, hence the difficulty in recognising their real nature.

Mr. R. BARWELL showed a case of (?) Cirsoid Aneurysm of the Left Upper Extremity. The man came for a wound of the left index finger, the bleeding from which was controlled with difficulty by a firm pad under the bent fingers. Gangrene of two fingers commenced after thirty-six hours. The arm was amputated above the elbow after ligaturing the subclavian artery. The veins of the arm and forearm pulsated strongly and with a thrill, but there was no buzzing unless on direct auscultation. The arteries freely pulsated everywhere in the affected limb. There were no discolourations or nævi. There was no hypertrophy, or warts, or overgrowth of hair. The condition was congenital. There was no direct communication between any artery or vein. A venous plexus existed on the median nerve just above the wrist. The venæ comites were not large. The third part of the subclavian ligatured was not enlarged. The brachial and other arteries were greatly enlarged and tortuous. An aneurysmal dilatation was seen at the origin of the superficialis volæ from the radial. There was not that meshwork of mixed arteries and veins as seen in cirsoid aneurysms. It was neither aneurysmal varix nor varicose aneurysm. Macro-anginosis was the term he applied to this unique disease.

Dr. J. A. PRICE showed a specimen of Cholesteatoma at the Base of the Brain, taken from the body of a widow, aged thirty-nine. It was situated in the space extending from the medulla to the optic chiasma, laterally extending as far as the temporo-sphenoidal lobes; it was encapsulated, the capsule being continuous with the pial arachnoid, and the brain substance was everywhere free from new growth. Microscopically, many cholesterine crystals were found in it, besides granular masses, and cells devoid of nuclei; the tumour was very brittle, and of pearly white aspect. There were other similar smaller tumours by its side. The patient had been ailing for five years, and had been liable to seizures, probably of an epileptic character; she had atrophy of both discs, and had been blind with the right eye for four years. A similar case had been fully reported in the fifth volume of the Society's Transactions.

The following card specimens were exhibited:—Mr. D'Arcy Power: A Rhinolith. Mr. Shattock: Colles's Fracture, with Displacement Forward of Lower Fragment. Mr. Doran: Horny Growth from Neck. Dr. G. N. Pitt: Thickened Capsule of Testicle. Dr. A. Withers Green: Aneurysm of Aorta ruptured into Pericardium.

MEDICAL SOCIETY OF LONDON.

Annual General Meeting.—Perforation of Femoral Artery and Vein from Suppurating Bubo.

THE annual general meeting of this Society was held on Monday last at 8 P.M., Mr. R. Brudenell Carter, F.R.C.S., President, in the chair. The President and officers of the Society for the ensuing year were elected. Their names appeared in our columns last week. The report of the Council stated that the Fothergillian gold medal would not be awarded, as only one essay, of insufficient merit, had been received.

Mr. MARMADUKE SHEILD read a case of Perforation of the Femoral Artery and Vein that occurred in a man aged twenty-two, a porter, admitted into Westminster Hospital under the care of Mr. Macnamara. The patient had a chancroid on the penis, phimosis, and a suppurating bubo in the groin, which was opened and profuse and offensive discharge let out. Counter-openings and stimulants were employed, but the suppuration extended. When the case came under Mr. Sheild's care, on Feb. 9th, 1887, the soft parts in the groin were much involved. The sinuses were slit up. One sinus passed behind and internal to the femoral vessels, leading into a cavity. The cavity was sponged out, and then bleeding commenced, slow and venous at first, arterial afterwards. The cavity was laid freely open and compression practised at the groin. Digital compression was successfully tried for a time. Davy's lever was employed to control the hæmorrhage, and both vessels were exposed and the ulceration explored. A hole the size of a crowquill was found in the femoral artery, or a part of the vessel near the trunk of the artery. The artery was tied once by itself and a second time with the vein lower down. The patient was much exhausted, and collapsed. Notwithstanding every attention, the patient remained very ill with pyrexia and rigors, and died a few days after the operation of ligature. At the partial inspection after death the head of the femur was found to be displaced towards the obturator foramen. The ligatured vessels were removed, and the specimen was shown to the Society. The vein between the ligatures was in a sloughy state. The superficial femoral artery was obliterated by firm clot. The author reviewed the literature of these rare cases.

Sir W. MAC CORMAC said the cases were very rare. He gave his own experience of like cases. It did not follow that ligature of both vessels near Poupart's ligament would necessarily lead to gangrene. Stromeyer said that double obstruction was a sufficient indication for amputation of the limb near the trunk. He strongly agreed with Mr. Sheild that pressure was an uncertain method of treatment.

Mr. BERNARD PITTS referred to a case of suppuration above Poupart's ligament in a boy. There was high fever. Aspiration was at first practised. But the fever continued, and abscesses appeared below Poupart's ligament. These abscesses Sir W. Mac Cormac incised, and counter openings were made. A few days later free hæmorrhage occurred, and this was found to proceed from a hole in the anterior aspect of the femoral artery half an inch below Poupart's ligament. In finishing the operation of ligature of the artery a snick was made in the vein, and this necessitated the double ligature of the vein. The boy recovered; the limb did not become gangrenous, was merely cold for a few days, and ultimately became a serviceable limb, though it was a little smaller than the sound one. He advocated powerful cauterisation as the treatment for sloughy wounds.

Mr. PICKERING PICK attempted to explain why it was that the carotid and femoral arteries were the only arteries that were the seats of this form of hæmorrhage. He considered that disease of the superficial glands might lead to affection of the deeply situated glands which are bound down by the strong fascia of the limb. It was possible that this close confinement by a tense fascia had at least some share in causing ulceration of large bloodvessels.

Mr. ASTLEY BLOXAM referred to two cases of hæmorrhage from the groin resulting from suppurating bubo: one occurred in a female and the other in a male. Both died from exhaustion, and in both the femoral artery was ulcerated. He alluded to a case of Mr. Morrant Baker's, in which the gluteal artery was the bleeding vessel, and to one in which the iliac artery opened into the psoas abscess. Pressure would, in his opinion, be valueless; the vessel should be secured where its coats were in a healthy state.

Mr. C. B. LOCKWOOD said that moist gangrene would be very likely to occur after double ligature when the limb was not in a healthy state, as when the ligature was performed for aneurysm or infiltration of the limb with blood.

Mr. THOMAS BRYANT was much pleased with the recital of Mr. Sheild's rare cases. And he could not help thinking that this condition of sloughy ulceration was responsible for the changes about the artery that led to ulceration and hæmorrhage. He had never met with one case of the femoral artery or vein which required the treatment such as Mr. Sheild had adopted. He had had cases of copious hæmorrhage in the inguinal region, all of which had subsided under simple pressure; and yet it was doubtful whether there was not perforation of the large vessels. The diagnosis was the difficulty. The hæmorrhage frequently came from the lower end of the bleeding vessel. Pressure should always be tried first. The axillary vein and internal jugular vein have often been tied without bad results. Some authorities in Germany advocated ligature of the main arterial trunk if the main venous trunk were ligatured.

Mr. HARRISON CRIPPS alluded to a paper which he had contributed to the St. Bartholomew's Hospital Reports, 1874, of fifty cases of ligature of the femoral artery in its continuity. He considered that pressure and bandaging, properly applied, was the most appropriate treatment for treating secondary hæmorrhage from the femoral artery. It was important to apply pressure above as well as below the bleeding point.

The PRESIDENT referred to the importance of ligaturing the artery at the bleeding points when ulceration from gunshot wound has been followed by secondary hæmorrhage.

Mr. M. SHEILD, in reply, pointed out that the saphena vein might be patent, and allow of a return of blood from the limb by its communications with the deep and muscular veins.

ACADEMY OF MEDICINE IN IRELAND.

Ovarian Tumour.—Treatment of Vaginismus.—Porro's Operation for Rupture of the Uterus.

AT the meeting of the Obstetrical Section held on Jan. 7th, The PRESIDENT exhibited part of an Ovarian Tumour which had been developed between the layers of the left broad ligament. On opening the abdomen the tumour came into view. It was punctured, and a large quantity of fluid escaped, and then the tumour partly collapsed; but he found it impossible to pull it out. He found that it extended along the uterus to the iliac region, and filled the whole of the broad ligament. It seemed to be unilocular, and therefore he only removed the part of it which he now showed, leaving about a third of the tumour behind. He removed the peritoneal covering and tried removal by enucleation; and in some places it gave way easily enough, but afterwards he came to adhesions which rendered that mode of enucleation impossible. The woman had hardly any rise of temperature until the second or third week after the operation, when she had a slight rise of temperature. She was now apparently quite well.

Dr. MORE MADDEN read a paper on the Treatment of Vaginismus, which he defined as excessive sensibility of the vaginal orifice and adjacent parts, attended with such spasmodic contraction of the sphincter vaginæ as to form an impediment to marital intercourse. This, he believed, occurred chiefly in patients of a hysterical temperament, and was generally occasioned by neuromata, confined to the parts supplied by the superficial perineal branch of the pudic nerve. From clinical experience he could vouch for the possibility, in many cases, of relieving the most intense dyspareunia thus caused, without any operative interference beyond the forcible dilatation of the vaginal canal and stretching the pudic nerve implicated by the disease. The method of effecting this was detailed, and the writer, at the same time, laid stress on the importance of conjoint employment of that topical and general sedative treatment which is indicated in these cases, as in all other local manifestations of constitutional, nervous, or hysterical disorder. In some instances, however, these failed, and we must then fall back on Sims' or Emmet's operations for the cure of vaginismus, the indications for which were referred to. In conclusion, Dr. More Madden pointed out that it sometimes happens that even in cases of vaginismus, so intense as to render complete marital intercourse impossible, the disease is not necessarily a barrier to impregnation. Thus, in one instance under his observation so extreme was the local hyperæsthesia as not only to prevent the possibility of complete cohabitation, but also to prevent the patient submitting to any local treatment for relief of the morbid condition. Nevertheless, conception occurred, and he subsequently was called in to deliver her at full term, and in doing so was obliged to incise the still unruptured hymen by which delivery was obstructed.—Dr. FRASER said he could confirm the remark as to the possibility of pregnancy occurring without vaginal intercourse.—Dr. S. MASON said a little rest, and painting the orifice with nitrate of silver, were sometimes very effectual. It was not always necessary to remove the hymen; but when that operation was done it was always well to make a lateral incision in order to expand the orifice.

Dr. S. MASON read a paper on a case of Rupture of the Uterus. On Nov. 5th, 1886, a patient was admitted to the labour ward of the Coombe Hospital, who had been in labour with her third child for more than three days. Her two previous labours had been difficult and tedious, the child in each case being stillborn, though labour was completed by the natural efforts. A clear history could be obtained of the uterus having ruptured twenty-six hours before the patient's admission to hospital. On opening the abdomen the child was found lying directly behind the abdominal wall, and was easily extracted by traction on the lower extremities; the placenta was in the right lumbar region, surrounded by blood and meconium, and the uterus was situated posteriorly, small, and well contracted, and in its lower part was a tear extending completely through the cervix. The uterus was then removed, the pedicle formed by the cervix being secured by a Keith's clamp and a transfixion needle, the abdomen being closed by silk sutures. The patient rallied well after the operation, and seemed to be progressing favourably for about ten hours, when she suddenly commenced to vomit and died. At the necropsy signs of recent and extensive peritonitis were found in the abdominal cavity. The portion of uterus enclosed in the clamp was torn through to the lower extremity of the anterior lip of the cervix. The bladder was uninjured. The pelvis was that described as the oblique pelvis of Naegele, complicated by projection downwards and forwards of the last lumbar vertebra.—Dr. SMYLY said the great difficulty with which Dr. Mason had had to contend was the poisoning either of the uterus or the peritoneum. To his mind, the great objection to bringing the child back was that it rendered the cleansing of the uterus and perineum impossible if either had become infected. Members were aware that Schroeder had performed Porro's operation in a different kind of case from the present—namely, in order to remove a uterus which had been infected by a portion of the placenta having been left in by the midwife, the doctor not having been sent for until a considerable time after delivery. In that case the portion of the placenta was found to be completely decomposed, and the operation saved the woman's life. Dr. Mason might have lost his patient by performing Sanger's operation instead of that of Porro.

CAMBRIDGE MEDICAL SOCIETY.

A MEETING of this Society was held on Jan. 7th, Dr. J. B. Bradbury, President, in the chair.

Severe Injury to Thorax.—Mr. FRANCIS showed for Mr Sunderland, of Thaxted, a patient who had recovered from a severe crushing injury to the thorax. Three years previously he was crushed between a traction engine and its tender. When seen a few hours afterwards, he was in a condition of great collapse, with considerable hæmoptysis. The sternal end of the left clavicle was dislocated behind the manubrium sterni, and the cartilages of the first six or seven ribs of the left side were separated from their attachment to, or fractured just outside, the sternum, and driven behind that bone. The shoulders were drawn back and confined by a figure-of-eight bandage; but the hæmoptysis continued for a few days, and there was emphysema of the whole of the front, back, and side of the chest on the left side, and irregularity in the heart's action. For several weeks he appeared to be dying; he then improved rapidly, but owing to temporary paralysis of the musculo-spiral nerve on one side, the result of the original accident, he did not resume work until fifteen weeks from the date of the accident. The original deformity remains, and the sternal end of the clavicle can plainly be felt behind the manubrium; there is no evidence of pressure on the trachea, œsophagus, or large vessels.

The Formation of Thrombi in Pulmonary Vessels.—Mr. GRIFFITHS showed specimens of lung illustrative of thrombosis and embolism and the results produced thereby. The first was a specimen of a very large cavity occupying the upper lobe, which extended to the root, where the large branches of the pulmonary vessels were closed by thrombi; the second, where thrombosis had occurred in consequence of incomplete revolution after an attack of pneumonia on the right side, where gangrene in two areas of considerable size had supervened; the third, a series of infarctions of different ages from the same case, in which left cardiac disease and carcinoma of cervix uteri were the chief anatomical lesions. The vessels corresponding to the areas had been dissected to demonstrate the presence of plugs in them. Microscopic preparations of the thrombi and of the different parts of the infarctions were exhibited.

Macro-glossia.—Mr. FRANCIS read the notes of a case of macro-glossia, which had been under the care of Professor

Humphry in Addenbrooke's Hospital. W. M——, male, aged five months, was admitted on Sept. 1st, 1886. He was thin, pale, and weakly, with a somewhat imbecile expression, but taking notice of things around: the tongue was too large at birth, and had been gradually increasing in size ever since; the child took the breast with difficulty, and had latterly been fed on milk-sop. The mouth was always wide open; the tongue freely protruded, curving abruptly downwards from the tightness of the frænum, with marked drooping and eversion of the lower lip: the protruded part was an inch and a quarter long in the middle line, and an inch and a half broad at the base, and quite symmetrically enlarged in all its dimensions, the edges being thick and rounded, the tip broad, truncate, and slightly bifid. The tongue could just be contained within the mouth, with evident discomfort; there was wide dilatation of the nostrils and marked bulging of the submaxillary region; saliva freely dribbled from the mouth, and there was an eczematous eruption about the chin and lips; the submaxillary glands appeared to be slightly enlarged on both sides. The protruded part of the tongue presented two deep antero-posterior furrows, parallel with the edges of the tongue and meeting just behind the tip; within the furrows the dorsum was convex from before backwards and from side to side, and coated with brown fur. The edges were clean and superficially ulcerated here and there; the papillæ were everywhere enlarged, and scattered thickly and irregularly over the anterior part of the dorsum and to a less extent over the under surface were numerous, pale, translucent, lymphatic cysts, from the size of a millet-seed downwards; the whole tongue was moist, and nowhere cracked or dry. There was no evidence of glossitis, nor hæmorrhages in the mucosa; there were no teeth, no deformity of the lower jaw, no evidence of lymphangiectasis of any description elsewhere, nor any deformities. There was no history of mental disease, or deformities, or struma in the family. The child died suddenly after being in the hospital a week, with a temperature, irregular before, suddenly rising to 108° F. There was a little difficulty in swallowing, but no interference with respiration. A portion of the posterior part of the dorsum, where the disease was least advanced, was examined microscopically. The papillæ were much and irregularly enlarged, more vascular, and covered with a thick layer of cuticular cells superficially. The submucous lymphatics were enlarged here and there, and the lymph canalicular system of the muscle-bundles was especially dilated, but no defined cysts or hæmorrhages were seen.

Mr. WHERRY described and exhibited a case of remarkable Power of Retraction of the Tongue. The organ could be completely pushed up behind the soft palate and uvula, and the tip could be made to touch, with precision, any part of the post-nasal region.

Communication of Diphtheria.—Dr. ANNINGSON described three special epidemics and several isolated cases of diphtheria which had occurred in his experience. The former illustrated very well the tendency of diphtheria poison to cling to localities and reappear at certain periods with special force, as well as the influence of school assemblage in favouring the spread of the disease. One interesting feature was the sudden explosion of the disease, after a period of quiescence, among the girls attending school, while the boys, with one exception, escaped; and his case was explained by his having been exposed out of school hours to the same influence as the girls. Dr. Anningson also related some apparently unexplained cases of diphtheria in lonely detached houses, which afterwards could be traced to rain water used for drinking which had been contaminated by the droppings of domestic birds; also an instance where the converse seemed to have occurred in the infection of pools by human discharges.

ROYAL LONDON OPHTHALMIC HOSPITAL. — The annual general meeting of the supporters of this institution was held on the 8th inst. The report stated that the hospital had in the past year afforded relief to 28,260 persons, the in-patients numbering 2049 and the out-patients 26,211. The total receipts for the year, including legacies, amounted to £6939, a sum which more than met the expenditure.

PRESENTATION.—The Committee of the Monkwearmouth and Southwick Dispensary have presented Dr. Bruce Low with an illuminated address, he having been appointed a surgeon for the Sunderland Infirmary, and consequently having resigned his connexion with the Monkwearmouth institution.

Reviews and Notices of Books.

A Treatise on the Principles and Practice of Medicine. By AUSTIN FLINT, M.D., LL.D. Sixth Edition, revised and largely re-written by the Author, assisted by WILLIAM H. WELCH, M.D., and AUSTIN FLINT, M.D., LL.D. London: J. and A. Churchill. 1886.

A NEW edition of a work of such established reputation as Flint's "Medicine" needs but few words to commend it to notice; but to this sixth edition there attaches a melancholy interest in the fact that its preparation occupied the mind of its learned and much-lamented author during the closing years of his life. It may therefore in truth be said to embody the fruit of his labours in clinical medicine, ripened by the experience of a long life devoted to its pursuit. The volume has further been revised by the author's son, the well-known Professor of Physiology in the Bellevue Hospital Medical College, and by Dr. Welch, Professor of Pathology in the Johns Hopkins University. A comparison of this edition with the preceding, which was published in 1881,[1] serves to illustrate in a striking manner the remarkable advances made, especially in pathology, during the past five years, necessitating in many chapters an entire recasting of the text, with numerous additions in the statements of observed facts. Dr. Welch's assistance in these chapters has been invaluable, with the result that the reader will find a clear and succinct account of our present knowledge upon the etiology of disease and the nature of morbid processes which no other text-book of medicine supplies. Amongst the additions to the volume may be noticed the articles on Infectious Tumours, Syphilitic Disease of the Lungs, Cerebral Syphilis, Spastic Cerebral Paralysis of Children, Hereditary Ataxia, Myxœdema (which, by the way, is omitted from the index), Multiple Neuritis (where, however, we miss any reference to the recent and rapidly accumulating evidence of the influence of alcoholism in its causation), and the General Pathology of Fever; but this enumeration does not nearly cover all the additions and alterations in the text of the work. If we were to single out, where all is of such good quality, any chapters as especially noteworthy, we should have little hesitation in pointing to those upon Diseases of the Lungs and the Heart, for these were subjects to which Dr. Flint paid special attention. His well-known views upon the constitutional nature of pneumonia, or as he terms it "pneumonitis," or preferably "pneumonic fever," promulgated many years ago, have received striking confirmation in Friedländer's discovery of the "pneumococcus," although it is pointed out that the evidence of this being the specific organism is as yet inconclusive. The article on Pulmonary Phthisis is notable for the sagacious remarks upon treatment, especially upon the momentous question which is pressed upon the physician as to advice respecting the patient seeking a change of climate. In the chapter upon Valvular Disease of the Heart the significance of the various murmurs is most clearly set forth. The section devoted to Diseases of the Hæmopoietic Organs contains an excellent account of pernicious anæmia, in connexion with which it may be remarked that "more than twenty-five years ago" Dr. Flint pointed out the dependence of certain fatal cases of anæmia upon degeneration of the gastro-intestinal glands, which Dr. Fenwick in this country confirmed many years subsequently. But it is not necessary to adduce evidence of the care or labour expended on the work; it speaks for itself, and will remain as a permanent testimony to the great abilities of its author. We cannot, however, refrain from quoting a passage from the preface contributed by his son, for it affords

[1] THE LANCET, vol. ii. 1881, p. 134.

some insight into his immense industry and capacity for work, that may be taken as an example worthy to be followed:—

"The basis of the work is an unbroken series of records of cases in private practice and in hospitals, begun in 1833 and continued for more than half a century, covering 16,920 folio pages of manuscript, written with the author's own hand. These records embrace carefully written histories of cases in all departments of practical medicine, observed under varied conditions of life, climate, and general surroundings. Soldiers in camp and barracks; the rich and the poor; those affected with diseases incident to lives of ease and luxury, and paupers in hospitals; the pioneers of Western New York and the inhabitants of the metropolis; patients in the wards of the almshouse and hospitals of Buffalo, of the Marine Hospital in Louisville, Kentucky, the great Charity Hospital in New Orleans, Louisiana, the Bellevue Hospital, the Charity Hospital, the dispensaries and similar institutions in the city of New York; cases observed in the experience of a quarter of a century as a general practitioner, and of more than another quarter of a century as a consulting physician, including the epidemics which have occurred in this country within the last fifty years,—the experience derived from these various sources of observation, carefully recorded, studied, and analysed, was finally used in the composition of this treatise, the first edition of which appeared in 1866."

America may well be proud of having produced a man whose indefatigable industry and gifts of genius have done so much to advance medicine; and all English-reading students must be grateful for the work he has left behind him. It has few equals either in point of literary excellence or scientific learning, and no one can fail to study its pages without being struck by the lucidity and accuracy that characterise them. It is qualities such as these which render it so valuable for its purpose, and give it a foremost place among the text-books of this generation.

Anatomy and Physiology in Character. By FURNEAUX JORDAN, F.R.C.S. London: Kegan Paul, Trench, and Co. 1887.

ATTEMPTS to connect physiological appearances with a certain stamp of character are as old as Aristotle and Plato. Mr. Jordan, in his recently published work, seeks to establish the connexion on a scientific basis. In the preface he apologises for the "unpleasant and clumsy epithets of shrewish and non-shrewish," which he uses for want of better terms. His attention some time ago was drawn to the physical conformation of women in hospital suffering from ill-usage at the hands of their husbands. The peculiarities common to them all were a clear skin, often pink, scanty hair growth both on the head and eyebrows, and convexity of the spine, more or less marked. Friends and neighbours said or hinted that these women had "sharp tongues in their heads." Mr. Jordan eventually discovered that these peculiarities in connexion with a shrewish character were not confined to one sex, and he classes men and women under the two heads of "shrews and non-shrews." Some of us may be inclined to doubt the truth of Mr. Jordan's deduction, remembering cases of decided shrewishness in persons of markedly pigmented skin and thick hair growth, and an absence of the same in the type called by him "shrews." After three chapters devoted to the character of the shrew and non-shrew, male and female, there is an account of the differences of skin, hair, and bones to be found in these two classes. In the shrews the dorsal curve is of excessive length, not infrequently reaching even below the waist. This curve affects the position of the head, and throws it forward. "The antero-posterior diameter of the thorax is relatively increased; hence its cavity from breast-bone to spine is deeper. In the non-shrewish skeletons the long transverse is exceedingly marked; it would seem as if the thorax were endeavouring to throw itself back and embrace the spinal column. This backward tendency of the spine has one striking result—the curves of the thorax posteriorly on each side of the spine lie at a level distinctly posterior to the most prominent portions of the vertebral bones, so that, looked at from behind, the spine, even at its dorsal curve, is seen to lie on an actual hollow between the two shoulders." Mr. Jordan lays some stress on the fact that in shrewish men and women the skin is clear, transparent, and pigmentless, often accompanying very pretty features. The nails are inclined to be thin and weak, easily bent or torn, the hair thin and scanty, the eyebrows especially being poor and uneven. That marriages should ever be arranged by a mutual choice of shrews with shrews and non-shrews with non-shrews appears to be very hypothetical; still, Mr. Jordan is not without some hope that future years may bring such a result. The characters of shrews and non-shrews may be summed up in a few words. Shrews are superficial, restless, consequential; having no deep sympathies, affections, passions, or emotions; nearly always moral, not from an inherent sense of duty, but from the desire to be considered respectable. They are apt to be discontented at home, but to shine in society, of which they often form very useful members. Non-shrews cannot precisely be described as the direct antithesis, but they have deep emotions, sympathies, affections, and passions. Non-shrews are more easily led into crime, owing to their deeper feelings. It is not incompatible with non-shrewishness to shine in society or to be voluble and passionate, since a shrewish person does not feel deeply enough to be really angry. Mr. Jordan expresses a hope that more attention will be paid in future years to physiology in connexion with the training of children and the development of character. The closing chapters are devoted to the shrewish character in connexion with literary work and the influence apparent in many standard books.

Alexander Wood, M.D., F.R.C.P.E., &c.: a Sketch of His Life and Work. By the Rev. THOMAS BROWN, F.R.S.E. (his Brother-in-law). Pp. 203. Edinburgh: Macniven. 1886.

To the personal friends of the late Dr. Alexander Wood this book cannot fail to be acceptable as furnishing them with a record of his many kindly and estimable qualities, and of the zealous manner in which he worked to advance the interests of his profession and to promote any public philanthropic and Christian work. It will also prove interesting to many of the older alumni of the university and medical schools, as it contains some reminiscences of Edinburgh as it was sixty years ago, and of the professors and teachers about that period. But we regret to add that it is open to the objection which may be brought against most of the biographies written by near relatives, that it takes a very partial and one-sided view of the work done by the subject of the memoir. A reader of the present volume might fairly rise from its perusal with the impression that almost all the work done in Scotland during the last half-century to improve the science of medicine and the status of the profession had originated with, and been carried through mainly by, Dr. Wood. In fact, there is scarcely, from the beginning to the end of the book, any mention of the work done by any other member of the profession. This is much to be regretted, as it cannot fail to produce an unpleasant impression that his biographer is claiming for him an amount of influence which he did not exercise. Dr. Wood's many good qualities and zealous work were sufficient to ensure him distinction and respect without the labours of others being of necessity ignored. The volume is remarkably well brought out, and contains two portraits of Dr. Wood—in middle life and in his later years.

THE LANCET.

LONDON: SATURDAY, MARCH 12, 1887.

THE Committee appointed to inquire into the accommodation for prisoners in court-houses and other places while waiting for trial at assizes and sessions have now issued their report, and the particulars contained therein confirm in the fullest manner the grave charges which THE LANCET has from time to time brought against the existing arrangements, and proves that, so far from such complaints being exaggerated, as has been repeatedly affirmed, the accusation has actually fallen far short of the reality. Those only whose duty it has been to visit the court-houses and other places where prisoners are detained whilst waiting for trial could have been prepared for the statement of the committee, that "in very few everything that can be expected is to be found," but many, "on the contrary, are as bad as well can be." Of these they go on to say "that nearly every requisite of humanity, and even of common decency, is wanting; and scenes still take place which it might reasonably have been hoped belonged to fifty or a hundred years ago." When the details on which this statement is based become known to the people of England, a feeling of disgust and mistrust will be aroused, which will fall heavily on those who have sturdily maintained the perfectability of our prison system: disgust that such abominations are permitted; mistrust lest the much-praised management of the gaols be in reality as defective as that of the court-houses. With regard to this latter point our opinion has been frequently expressed, and it is well known that we do not view with approbation the treatment indiscriminately adopted for all prisoners after trial under the provisions of the new Prisons Act.

But to return to the arrangements provided for those who are not yet proved guilty. In the first place, one would imagine that, in England at least, there would be neither want of ventilation nor of decent closet and urinal accommodation; yet in Derby we find as many as twenty prisoners at a time crowded into a room only 18 ft. by 9 ft.; at Ipswich, twenty to thirty in a room of 11 ft. 10 in. by 5 ft. 2 in. by 6 ft. 3 in.; and at Oxford, twelve in a room 9 ft. by 8 ft. 6 in. In some of these rooms there is no separation of adults and children, of convicted and unconvicted! In some of the places, however, where separation is attempted, torture is superadded to confinement, and men and women are bolted for many consecutive hours, sometimes days, in dens hardly larger than ordinary clothes-cupboards. Thus at the Central Criminal Court the dens are 2 ft. 6 in. by 3ft.; at Marlborough, 2 ft. by 2 ft. 4 in.; Gloucester, 2 ft. 1 in. by 2 ft. 4 in. In these last the Committee inform us that prisoners have been confined six days consecutively. As regards the sanitary arrangements, in many cases the offices of nature, if performed at all, must be performed in the presence of spectators; at Hereford there is an earth-closet, without a screen, in the one room occupied by the prisoners and the warders. Happy those who are provided with pails in their cupboards. At Marlborough there is one room with a number of boxes in it. "Sawdust is used to cover the excreta; the stench is sometimes very bad." At Petworth, with sometimes twenty-two prisoners in one room, the only accommodation is a bucket behind a screen. In important towns, such as Carlisle, Derby, Newcastle, and Oxford, there is no watercloset, privy, or accommodation of any sort. After such a confession as to the provisions for ordinary decency, we are not surprised to learn that the arrangements for lighting and heating are extremely defective. Some places are, indeed, provided with hot-water pipes and gas-burners, but in this case the prisoners seem to be worse off than without them, for owing to the minute cubic space allotted in these dens, the atmosphere speedily becomes close and overheated, whilst the heat causes rapid decomposition of the contents of the pails and the sawdust-covered excreta, so that after a few hours the effluvium becomes unbearable and the air foul and poisonous. In other places no attempt is made to warm the buildings, so that in winter the temperature sinks often to 40° F., and that with damp and unprotected stone floors. These insanitary conditions explain in part the high relative death-rate from pneumonia, which we have often pointed out as characteristic of prison bills of mortality, though no doubt the plank bed and deficient dietary of the convicted prisoner give the final stroke. In some places the gaslight is placed outside the cell, so that the prisoner remains in partial darkness and gloom, sometimes for many days together. Even in these wretched holes one would think some provision would be made for the physical rest of the prisoners, yet we learn that in the prisons where seats are provided they are mostly of stone and brick, cold and damp, and consequently injurious if used continuously; but in most instances no seats are provided, and the wretched prisoners have either to stand like cattle in railway trucks, or squat like negroes between the decks of a slaver. So much for the physical aspect, but the moral is quite as revolting; one would think the matter of the separation of the sexes is a question that would hardly be open for discussion, and yet "this elementary requisite of decency" is not invariably provided for. We always understood that the separation of prisoners was one of the most important points attended to under our "perfected" criminal laws. Fancy the fate of a young servant girl, arrested on suspicion for some small theft—erroneously, perhaps,—kept in contact for many hours with abandoned men and women. Lucky for her if chance isolates her in the two-foot cupboard! Surely the reasons that separate tried prisoners from each other hold with greater force in the case of the unconvicted.

Only a few years have passed since THE LANCET commented upon the treatment of an unfortunate unconvicted prisoner who died at Winchester, after repeated journeys to and from Southampton, where he was exposed to many of the evils at present commented on. At the time we were assured that our statements were unwarranted, and our conclusions false; but the present picture is a hundredfold darker than we then dared to think even possible. Then the officials declared that the arrangements were perfect; now it is clearly shown how defective in many cases they really are. As it has been proved with regard to our court-houses, so we

fear it is with our gaols. We have had repeatedly to comment on the deaths of prisoners in gaol from pneumonia or suicide, and other causes, and we are repeatedly told that these are exceptions—that no system was ever more perfect. We doubt it, even as we doubted the case of the unconvicted, and we hope the public and the press of England will call for a commission of inquiry into the conditions of convicted similar to that which has just issued its report on the treatment of unconvicted prisoners.

WE have already dealt at length with that portion of Dr. BUCHANAN'S recent report which discusses the important question of the influence of small-pox hospitals in London. It remains to note some of the other subjects which are dealt with in the same volume. Amongst these the connexion of scarlatina with disease in milch cows is referred to, the points discussed being mainly based on the circumstances attending the Hendon scarlatina epidemic in 1885, although the whole story of milk epidemics is briefly alluded to. The Hendon outbreak, and the reports on it by Mr. POWER, Dr. KLEIN, and Dr. CAMERON, were commented on in our columns at the time of the occurrence, and we need now only refer to the matter in connexion with the more recent labours of Dr. KLEIN as to the pathology of the illness in the cow, which was found to be associated with the scarlatina, and to point out that his completed report is illustrated by a series of excellent lithographic plates. It must also be noticed that, amongst other important observations recently made on this matter, Dr. KLEIN is announced to have obtained from the blood of ordinary human scarlatina a micro-organism identical in its morphological characters with that inhabiting the ulcers of the Hendon cow disease. In view of what has recently been learnt as to scarlatina, Dr. BUCHANAN finds reason to expect that a measure of additional control may be obtained over a disease which, in spite of the general sanitary progress of the country, is still fatal to some 17,000 or 18,000 persons during the average year in England and Wales. Dr. KLEIN has also pursued his investigations as to foot-and-mouth disease, and he has been able to identify the disease in the lower animals with a definite kind of micrococcus occurring in wavy chains, streptococcus, in the vesicles of the disease; and subcultures have the power of inducing the same affection. This power is most surely exerted when animals are fed with the infective matter, but although inoculation does not produce disturbance of health, yet animals so inoculated became refractory to the influence of the poison administered to them by feeding.

Tubercle has been further studied by Dr. KLEIN and Mr. LINGARD, and, in addition to some negative results, it has been ascertained that tubercle in the fowl, which is of the nature rather of the disease which affects man than of that which prevails in bovine animals, can be communicated to the fowl during feeding by means of human tubercular sputa. Further, it appears that tubercle derived from the human subject, and used to produce disease in fowls, may undergo some loss of its infective power during its passage through the fowl.

The important subject of disinfection has continued to engage the attention of the medical department of the Local Government Board, and further investigations have been carried out by Drs. KLEIN and CASH as to the influence of perchloride of mercury. Both the antiseptic or restraining powers of this salt and its disinfecting or killing powers are now ascertained to be considerably greater than those of any other known substance. Dr. KLEIN states that non-pathogenic substances offer the greatest resistance to the operation of the mercuric salt, and he describes the measures by which it is practicable to produce a modified form of anthrax in sheep by inoculating the animals with the material of anthrax along with corrosive sublimate, and this without the special aid of experts. The drug, according to Dr. CASH, appears to operate in a way similar to that of a previous attack of the disease, giving, for a time at least, a feebler quality to an attack of the disease, and this in turn seems to give immunity against recurrence.

The report contains a further contribution from Dr. DUPRÉ on the question of the consumption by bacteria of oxygen from the dissolved air in water. Dr. DUPRÉ has had to differentiate between those organisms which are and those which are not destroyed by prolonged heating to a temperature of 60° C.; and, experimenting with London waters, the following results, as summarised by Dr. BUCHANAN, have been arrived at. 1. Differences are observed at different periods of the year in the behaviour towards oxygen of the bacteria of the water furnished by a London company deriving its supply from the Thames; differences which seem to require for their explanation that there is variation in the power of different bacteria (present at one and another time) to resist a temperature of 60° C., or else that there are seasonal fluctuations in the power of the surviving bacteria to use the oxygen of water-dissolved air; differences which, it is to be observed, would not be in any way discerned by ordinary chemical methods. 2. The faculty of consuming oxygen, after resisting a temperature of 60° C., possessed by waters taken from the Thames and Lea, and attributed to the bacteria contained in them, is present in a higher degree in deep well waters; their special faculty, again, varying at one and another time, as in the case of the Thames water. This latter consideration leads Dr. BUCHANAN to point to the possibility that we may here be confronted with the existence in deep well water of unrecognised spores of bacteria, and with the question of the influence of light on bacterial life. Indeed, the research tends to show how much we stand in need of knowledge as to harmless as well as to disease-producing bacteria. In fact, the whole subject naturally calls forth a plea for the further study of bacterial life, and Dr. BUCHANAN urges that instead of dealing with the harmful bacterium, when detected, as we now do by poison or by boiling, we may find it more scientific to turn against it such forces of nature as are customarily antagonistic to it. The whole history of bacteriology and of epidemic disease points to the existence of such forces, and pathologists have long been inclined to believe that amongst "agencies antagonistic to the bacteria of disease, none will be found to equal in potency the agency of other bacteria." Holding such points in view, Dr. BUCHANAN, whilst promising in the immediate future further inquiries into the pathology of scarlatina and into other matters of immediate urgency, expresses a hope that opportunity may be afforded for some more general

researches into the important subject of the life-history of bacterial organisms. There are reasons for believing that in such study a clue may be found to much that is still mysterious and unintelligible in connexion with epidemic disease, and no more fitting work than that suggested could be undertaken by that department of the Government which is above all others, interested in controlling those influences which tend to injure public health.

THE Oldham poisoning case is remarkable in many ways, and is well deserving an analysis. The facts which transpired at the Liverpool Assizes just concluded, where on Feb. 25th the prisoner was convicted and sentenced to death, are briefly as follows. The prisoner, ELIZABETH BERRY, aged thirty-one, was a nurse at the Oldham workhouse infirmary. She was a widow, with one child aged nine years and six months. She was indicted for having wilfully murdered this child by administering to her a corrosive poison. The deceased girl had been living for some years with a sister-in-law of the prisoner, who paid certain sums for her maintenance, clothing, &c., in all between £12 and £13 per year. On Dec. 27th, 1886, the prisoner visited her daughter at Miles Platting, and returned to Oldham with her and a child companion on Dec. 29th. The deceased remained well in health up to the morning of Jan. 1st, 1887. The sitting-room of the prisoner was next to the dispensary of the infirmary, and she alone had the key of the dispensary. At 9.30 A.M. on the aforesaid day deceased was running about with her playfellow; at 10.15 A.M. she was in the dispensary, accompanied by no one except her mother; fifteen minutes later she was seen vomiting in the sitting-room. The prisoner was holding a tumbler in her hand, and the deceased was heard to exclaim, "Oh, mamma, I can't drink it." The vomited matter was thrown away at the request of the prisoner. Dr. PATTERSON, the infirmary medical officer, was asked to see the child. He prescribed iron and cinchona. A vessel was shown him in which was some matter streaked with blood. He seems to have suspected that the child's illness might not have been due to natural causes, but this suspicion he evidently did not consider sufficiently grounded to act upon.

The prisoner would have no one to sit up with deceased but herself. Curiously no explanation of her illness seems to have been given by or sought from deceased. Next morning (Jan. 2nd) the patient was better—so much so that Dr. PATTERSON expressed himself as hopeful of her recovery. Towards evening, however, she became much worse, and Dr. PATTERSON was again sent for. His attention was directed to a "towel covered with matter which contained blood." Feeling dissatisfied, he asked Dr. ROBERTSON to meet him in consultation. As the result of this, morphia and bismuth were prescribed to combat the symptoms—vomiting and pain at the stomach. On the same day (Jan. 2nd) redness and, according to one witness, blistering of the lips were observed. It is certain a blister had formed by the morning of the third day. The symptoms noted above continued more or less pronounced until death, which occurred from exhaustion at 5 A.M. on Jan. 4th. During life Dr. ROBERTSON noticed that the lips, gums, and tongue were white, but moist. The whiteness was not from furring, for, as Dr. ROBERTSON testified, he had never seen a tongue like it before.

The prisoner gave two explanations of the marks on the lips: (1) that they were caused by some lemon and sugar, and (2) that they were due to the "ulceration of the mouth." Post mortem these marks became dry and brown, and were clearly owing to the action of some powerful irritant or corrosive. The outline of the marks on the lip, extending on either side from the middle to the angle of the mouth, and in one place for three-quarters of an inch on the cutaneous surface, was quite inconsistent with the theory of *herpes labialis* suggested by the counsel for the defence. In addition to the state of the lips and mouth just described, other evidence of corrosion was forthcoming at the necropsy. In the œsophagus was a black charred patch, and there were black streaks below this. The stomach was not charred, but it showed signs of recent inflammation, and so did the small intestine. With the exception of an old caseous nodule found in one lung, there was no organic natural disease. The contention that the deceased was tubercular had thus no foundation in fact. The weakness of the defence was shown by challenging the view taken by Drs. HARRIS PATTERSON, and ROBERTSON, and Mr. ESTCOURT—viz., that the tissues had been acted on by some corrosive agent. This was futile in the extreme, for the evidence on that head was overwhelming. There seems no reason to doubt that something was taken by, or administered to, the deceased at the time she went into the dispensary. Had she taken anything accidentally or mischievously, would she not have confessed the fact when seized with obstinate vomiting and acute pain? The lull in the symptoms on the second day might have been deceptive and accounted for by the state of exhaustion; but, considering that the blisters on the lips were not observed until the end of the second day, it seems probable that a second dose of the poison was given. It was hinted in cross-examination that the creasote, or the iron and cinchona mixture ordered by Dr. PATTERSON, might explain the brown marking on the lip; but allowing for one moment this visionary hypothesis, the main question was still unanswered: What was the cause of the antecedent symptoms which set in with such fatal rapidity and violence? It is easy to invent several theories to explain certain isolated sets of facts, but in the case under consideration some theory was needed to cover a continuous chain of circumstantial evidence, and we maintain that the only tenable theory was that embodied in the finding of the jury.

Many statements made by the prisoner were known to be untrue. She averred that the life of deceased was not insured, when it was proved that she had herself taken out a policy for £10, which was paid to her after her daughter's death. Further, she had applied for a mutual insurance policy for £100, and although the company had not acceded to her request the prisoner was not aware of the refusal. Again, she tried to explain the disturbance of the alimentary canal in deceased by falsely saying that she suffered from constipation and had been treated for it. On no ethical standard—legal, religious, or social—could a motive be based at all adequate to such a crime as that which the prisoner was charged with having committed; but history shows that the motive to ill-doing is rarely commensurate with the

deed. At the Durham Lent Assizes, 1873, MARY ANN COTTON was found guilty of murder of a stepchild. Afterwards facts transpired which made it all but certain that she had compassed the death of her mother, fifteen children, three husbands, and a lodger—and mainly, if not entirely, for the sake of getting small sums from burial insurance societies. Later still a similar tragedy happened at Liverpool. There was nothing, then, as regards motive inconsistent with the likelihood of guilt in ELIZABETH BERRY'S case.

There is still some doubt as to the nature of the corrosive employed by BERRY; for on chemical analysis of the stomach, intestines, and other parts no poison was discovered, either organic or inorganic. The prevailing opinion points to sulphuric acid. If this be correct, we imagine the acid must have been diluted, or some traces would have been found, in the form of corrosion of the floor, carpet, towels, &c., in the room which deceased occupied during her illness. So far as the presence of soddening of the mucous membrane of the mouth and charring of the gullet and the absence of corrosion of the stomach are concerned, there is no bar to the supposition that sulphuric acid had been given in the concentrated form. It is the exception for the mouth to be charred, and not rarely the œsophagus looks pale, shrivelled, and corrugated, even when there is extensive blackening and perforation of the stomach. The local patch of corrosion in the œsophagus in this case was probably owing to the sudden arrest at that spot by contraction of the circular muscular layer just below. Some may then have passed on to the stomach, and some returned by vomiting. Sulphuric acid, even when considerably diluted, may prove quickly fatal. A man took on an empty stomach six drachms mixed with eighteen drachms of water, and died in two hours and a half (TAYLOR). The emptiness or fulness of the stomach, the degree of dilution of the acid, and the rapidity with which it passes over the mucous membrane, are conditions which greatly affect the extent of corrosion and the violence of the symptoms.

Sentence of death was passed upon the prisoner on Feb. 25th. Three days later a coroner's jury sitting at Castleton to inquire into the death of Mrs. FINLAY (mother of the convict), who died a year ago, returned a verdict of "Wilful murder" against ELIZABETH BERRY. Mrs. FINLAY was seized with attacks of "convulsions and delirium, ending in coma," and the medical man who attended her gave a certificate to the effect that the deceased died from apoplexy. No post-mortem was made at the time. During the illness BERRY was noticed to examine her mother's eyes. After the death BERRY received nearly £100 from an insurance society, and £13 4*s.* from a burial club. A person who gave her name as "ELLEN SAUNDERS," procured a quantity of atropine a short time prior to the death of Mrs. FINLAY, and it was alleged that BERRY was that person. The body of Mrs. FINLAY having been exhumed, an examination was made by Drs. HARRIS and PAUL, and an analysis of the viscera by the latter gentleman, who found traces of an alkaloid which he believed to be atropine judging from its physiological effects. The detection of atropine in a body that had been buried for a year is an interesting and unique event. There seems some doubt, however, whether the substance discovered by Dr. PAUL may not have been of the nature of a ptomaine or cadaveric alkaloid.

DR. LUCAS-CHAMPIONNIÈRE contributes the first paper in the January number of the *Revue de Chirurgie*, and in it he speaks of his experience of the operation of excision of the knee. His results have been so good, and his opinions are so opposed to some current surgical notions, that we desire to call special attention to them. He speaks of the earlier results of this operation as so discouraging that he was not tempted to perform it until 1883, the time when he had come to entertain absolute confidence in the aseptic treatment of wounds. And he lays special stress upon this fact. His opinions and conclusions do not apply to excisions of the knee in general, but only to aseptic operations, in which not only is the risk of blood poisoning entirely abolished, but the occurrence of suppuration prevented. The presence of suppuration he regards as evidence of failure in the operation, and, unless extremely limited in amount, as an imperative indication for amputation. It is clearly essential to realise Dr. LUCAS-CHAMPIONNIÈRE'S position in this respect before dealing with his results and recommendations. His series of cases includes eleven in whom the age varied from seventeen to thirty-four; the disease was tubercular arthritis in all but one case—that of a man, fifty-four years of age, who was suffering from rheumatoid arthritis. All the patients recovered; in nine there was union without any suppuration, in one there was very limited and transient suppuration, and in one case the suppuration necessitated amputation. In no case was there any local recurrence of the disease, and some of the patients were able to walk one or two months after the operation. Such results are extremely good, and cannot fail to excite the envy of most surgeons who have had a considerable experience of this operation. In view of the serious interference with the growth of the limb, the operation is not recommended in children; but, on the other hand, Dr. LUCAS-CHAMPIONNIÈRE thinks that middle-aged adults are suitable subjects for it, provided that the wound be kept aseptic and free from suppuration. He makes some important remarks in reference to tubercular disease. First of all, he has not found that excision of the knee leads to general tubercular infection, and furthermore he does not regard tubercular disease of the lungs as a necessary bar to the operation. Where the pulmonary disease is far advanced, of course no one would entertain the operation; but where the disease in the lungs is in its first or second stage only, he has found removal of a diseased knee-joint exert a distinctly beneficial influence, and lead to a subsidence of the chest trouble. He explains the discrepancy between this opinion and that more generally held by saying that the key to success in this class of cases is the prevention of suppuration. Where the wound heals entirely by primary union, the operation exerts only a good influence upon the lung mischief; but if the wound becomes septic and suppurates, this further drain upon the system shows its presence by the gradual failing of the patient's powers and a more rapid advance of the disease in the lungs.

As to the mode of operation there is not much to say. Dr. LUCAS-CHAMPIONNIÈRE prefers the transverse incision below the patella. He makes the excision very free; always

removes the patella and every suspicious portion of femur or tibia; and then, having done this, he, with the most patient care, searches for and removes every particle of "granulation tissue." He drains the wound by three tubes, one at each end of the incision and one from the back of the joint out through the ham. All the ligamentous structures that have been divided, as well as the bones, are united by buried sutures of catgut.

This paper would appear to be an important contribution, and it is another proof of the revolution in surgical opinion and practice that the antiseptic treatment of wounds has brought about. For that is the central fact: upon the possibility of getting complete primary union of the wound hangs all the rest.

WITHIN a few days of the termination of the sittings of the General Medical Council a volume has been issued containing the confirmed Minutes of the Session,[1] as well as the various reports presented to the Council. The latter especially will be read with much interest, for they relate to questions which intimately concern the future of the profession and its usefulness to the public.

The chief of these in point of importance is undoubtedly the final report of the Visitation of Examinations Committee, which shows in every paragraph the extreme care which has been taken to consider the details of professional education and examination. The Committee are evidently impressed with the need for the introduction of practical teaching in every branch which is included in the medical course. The question of the relative values of systematic teaching by lectures and demonstrations and of practical training by the performance of individual work is seriously considered, and the fact is noted that to a large extent lectures have been replaced by more practical methods of teaching. The Committee, however, believe that lectures cannot altogether be superseded, and although text-books give opportunity for students to obtain information outside the class-room, the lecturer should be able to present material of so much value to his pupils, and arranged in such a form, as to render this method of teaching still an important element in medical education. No doubt there are many students whose power of acquiring knowledge is dependent rather upon the eye than upon the ear; a well-arranged course should, however, appeal to both, and the personal qualities of the teacher will go far to create interest in a subject which would otherwise prove tedious, however clearly it might be described in the many text-books which are now written for the students' use.

The period of time which should be devoted to medical and surgical education before the student is permitted to present himself for examination is touched upon in the report. It must be admitted that there is some ground for the argument that the specification of any period is tantamount to an admission that examinations cannot entirely be trusted to adequately test the state of a candidate's knowledge. The Committee, however, evidently regard this requirement as important in the student's interest, as well as of those who will subsequently come under his care, for they give as their reasons for not extending the time to be devoted to medical education the fact that a large proportion of students already voluntarily prolong their studies during five and even six years.

The necessity is recognised for the better teaching of pathology, including mainly pathological anatomy; of therapeutics, considered essentially as comprising the action of remedies on the healthy body; and of hygiene, embracing public as well as private health. These, it is said, are three expanding subjects, and demand special attention and separate teaching. Such recommendations will doubtless be carried out by the majority of the medical schools, and due regard will be had to the comments on the advantages of class examinations and of clinical teaching to classes of limited numbers of students which are embodied in the report. The subject of obtaining practical knowledge by the holding of dresserships and clerkships is given due prominence, but this will also engage the attention of the Committee to which Dr. GLOVER'S motion was referred.

It is impossible to pass from the report without referring to the admirable service which is rendered by the Registrar (Mr. W. J. C. MILLER, B.A.), both to the Medical Council and to the profession, by thus promptly making available for general use the lessons which the report contains, and which especially deserve the earnest attention of all engaged in the important duty of professional teaching and examining.

[1] Spottiswoode and Co.

Annotations.

"Ne quid nimis."

THE SANITARY CONDITION OF WINDSOR.

THE action which the Town Council of Windsor have taken, upon the report of Dr. Hubert Airy and Mr. Arnold Taylor on the sanitary condition of New Windsor, will, we trust, lead to reforms which have been often advocated in the columns of THE LANCET. A meeting was immediately called by the Mayor, and the report was read and carefully considered. The clerk, the medical officer of health, and the borough surveyor were requested to advise them as to what steps might be taken to improve the condition of South-place, and as to the powers conferred by the Public Health Act of 1875 and the Artisans and Labourers' Dwellings Acts, which would enable them to deal with the matters mentioned in the report. A committee was also appointed to consider and report upon the duties of an inspector of nuisances, and it was decided to make inquiry if the guardians of the Windsor Union would unite with the New Windsor Sanitary Authority in the erection of a hospital for infectious diseases and the provision of a disinfecting chamber. The Street Committee were also requested to consider and report on the recommendation that a furnace should be provided for the destruction of house refuse. No time has therefore been lost in taking preliminary steps to giving effect to the recommendations of the Inspectors, and it may be anticipated that under the guidance of Mr. Simpson, the present Mayor, who has a high reputation for public spirit, Windsor will soon attain the position which should be held by the Royal borough. It will be specially interesting to observe the effects of the changes which we hope to see made on the rates of mortality of New Windsor. Dr. Casey has well pointed out that, although these cannot be regarded as excessive—indeed, in some respects are distinctly low,—this is due to the fact of the comparatively small proportion of young and old persons in the population of the town. It is probable that a reduction can still be effected, and this is more likely to take place if steps are

taken for preventing the inundation of the low-lying parts at times of overflow of the river. Windsor must not be surprised if England expects her not to rest content with being superior as regards health conditions to some other towns in the country; she must, indeed, strive to be not inferior to the best; history marks her place in our national records, and she should be representative of everything that is best in English life. That she will become so there is now every prospect, and it may be remembered that the conditions which affect health are not limited in their result upon the body alone. The promptitude with which the Town Council are proceeding to carry out their promise to the President of the Local Government Board proves that there is every desire to make the town worthy to be a residence of our Queen.

MEMORIAL OF LONDON SURGEONS TO THE COUNCIL OF THE COLLEGE OF SURGEONS.

WE print in another page an important memorial which has been presented to the Council of the College of Surgeons by the teachers of surgery connected with the metropolitan hospitals. The signatures attached to it include, with only two exceptions, the names of all the surgeons at these institutions who do not occupy seats on the Council. The memorial contains a courteous but earnest appeal for the establishment of a pathological and surgical laboratory in connexion with the Hunterian Museum. Such an institution would be in complete harmony with Hunter's work, and would render the museum a more complete memorial of the founder of scientific surgery. But—and this is of more importance—it would supply a great and pressing need, and would do much to remove the necessity which undoubtedly exists at present of looking to Germany for nearly all advances in those departments of science upon which surgery depends. It is impossible for the Council to ignore so influential a memorial as this, even if it had the will to do so. It is almost equally hard for it to return a *non possumus* to such a request. The fact that the men who are busily engaged in the teaching and practice of surgery have with practical unanimity joined in this request is both evidence of the need that exists and is felt to exist, and a guarantee of the response that would be made to any action of the Council on the proposed lines. We are aware that the funds at the disposal of the College are by no means inexhaustible, and that special difficulties may be encountered before such a laboratory as is asked for could be established on a thoroughly satisfactory footing. But we trust that the Council will do its utmost to meet the very reasonable request now made to them.

THE ANTISEPTIC VALUE OF IODOFORM.

IT was hardly to be expected that the experiments and statements founded thereon which threw doubt upon the antiseptic property of iodoform (see THE LANCET, *ante* p. 328), recently published by Drs. Heyn and Rovsing, would have passed unchallenged. They were promptly and somewhat contemptuously dismissed as untrustworthy by a writer in the *Wiener Med. Wochenschrift* (No. 6); and in the current number of the *Fortschritte der Medicin*, the editor, Dr. Friedländer, warmly defends his contributors against this onslaught. The attack threw doubt upon the experiments as coming from unknown observers, and suggested that the paper had gained entrance to the pages of the *Fortschritte* through editorial inadvertence. Dr. Friedländer has no difficulty in dispelling this idea as being utterly baseless, for not only was the article communicated to him by Dr. Salomonsen of Copenhagen, but he had himself been struck with its thoroughly scientific character and value, as proving at least that iodoform belongs to a class of antiseptics differing from carbolic acid and corrosive sublimate. That the subject deserves further study he freely admits, and carries this out by inserting in his journal a criticism of the paper by Dr. Poten of Hanover, written in a far different spirit from that of the Vienna writers. Dr. Poten points out that the virtues of iodoform as a dressing depend largely upon the liberation of iodine in contact with the tissues and secretions, and also that owing to its insolubility it is not possible to test its action on pathogenic organisms in the same way as other substances can be tested. He does not endorse the statement that iodoform is dangerous because of its possibly being contaminated with septic material, and considers the united testimony of practical surgeons as to its efficacy to override such rather problematical risks.

SIR MICHAEL HICKS BEACH.

THE health of our statesmen is a matter of supreme interest to the public, especially if there be any suspicion that it is affected by their public duties. Some months back Dr. Robson Roose, finding that Sir Michael Hicks Beach was suffering from cataract, suggested a consultation with Mr. Anderson Critchett. It was then found that the sight of the right eye was of little value owing to the density of the lenticular opacity; but as with suitable glasses Sir Michael could still, though with some difficulty, conduct the work of his high official position, he was allowed to continue his labours. Within the last few weeks the sight has rather rapidly declined, doubtless owing to constitutional causes; and at the consultation held on Friday, the 4th inst., at Sir William Jenner's, it was decided that Sir Michael could no longer retain office without grave risk. The cataract in the right eye is diffused, and that in the left eye is now confined to the centre of the lens. Sir Michael will shortly visit Germany for the benefit of his health, and, as it is essential that his case should be under medical supervision, he will while there be under the care of Dr. Pagenstecher, of Wiesbaden. Some little time must of necessity elapse before Sir Michael returns to England to place himself in Mr. Critchett's hands for operation. The hope that this procedure may be successful will be shared widely by the public, who have not been insensible to the unselfish patriotism with which Sir Michael undertook his thankless office, and the devotion to duty which has exhausted his powers.

NEW INSTRUCTIONS TO PUBLIC VACCINATORS.

THE Local Government Board have issued new instructions to public vaccinators, to supersede those of sixteen years ago. The alterations, which are wisely conceived, relate specially to ensuring the better performance of the operation of vaccination, and to the avoidance of septic poisoning. For the former, it is ordered that the insertions of lymph shall be such that the total area of vesiculation on the same day in the week following the vaccination should be not less than half a square inch; for the latter, a caution is given against the use of any means of protection or "shield" that cannot readily be destroyed and replaced whenever it becomes soiled. Public vaccinators are also required to enter in their register the initials of the person operating, and subsequently inspecting the vaccination, and they are cautioned against the employment of lymph supplied by any person who does not keep exact record of its source. It is further required that lymph be not taken from children who have any sort of sore at or about the anus, or from a vesicle around which there is any conspicuous commencement of areola. The caution contained in the superseded instructions not to take under ordinary circumstances more lymph than will suffice for the immediate vaccination of five subjects, or for the charging of seven ivory points, or for the filling of three capillary

tubes from such a vesicle as vaccination by puncture commonly produces, is now replaced by the requirement that more than this amount of lymph shall not be taken from a well-formed vesicle of ordinary size except under circumstances of necessity. Lymph, moreover, is not to be taken that has run down the skin, the vesicle is not to be scraped, and the lymph is to be changed if on the day week after vaccination the cases show any conspicuous areolæ round their vesicles, while formerly the presence of any areola was regarded as reason for omitting to take lymph from such a vesicle. Vaccinating lancets are not to be used for any other purpose whatever, superseding the old instructions, which required that they should not be used for other surgical operations. The instructions end with the advice which experience has shown to be necessary: "Never use any ivory point or capillary tube a second time, either for the conveyance or storage of lymph; but when points or tubes have once been charged with lymph and put to their proper use, do not fail to break or otherwise destroy them."

THE SIGNIFICANCE OF THE RETENTION OF THE MEMBRANES AFTER LABOUR.

THE importance to be attached to the retention in the uterus of portions of membrane after the completion of the third stage of labour has been variously estimated by different obstetricians: some—e. g., Winkel, Dorn, Ahlfeld, and Graefe—holding that grave dangers are to be apprehended when this occurs; while others—as Alshausen, Credé, Fischer, and Cohn (who has reported two cases in which nearly the whole membrane had been retained for five days without causing any pyrexia)—believe that little or no danger of hæmorrhage, septicæmia, or other puerperal mischief is caused by the retention of even considerable portions of the membrane. An explanation of this divergence of view has recently been attempted by Professor Lazarevich in the opening article of the new Russian *Obstetrical and Gynæcological Journal*. His explanation is founded on the fact, unrecognised by most obstetricians, that "the membranes," even at the full term, are composed of and more or less separable into three distinct layers representing the chorion, the decidua, and the amnion. The strength of these has been investigated by Poppel, Duncan, and Ribemont, and the amnion shown by them to be much tougher than the chorion in conjunction with the decidua. Professor Lazarevich has also made a number of researches on the subject by means of an apparatus consisting of two rings covered with indiarubber, between which the membrane to be examined was stretched, the resisting force being estimated by means of a wooden hemisphere on which weights were placed, which the membrane was made to support, more weights being added until it gave way. These observations showed that the integrity of the ovum depends almost entirely on the amnion. During labour some separation of the membranes from one another usually occurs, and this is especially the case when the chorion, split or torn below, maintains a close connexion with the decidua, and the decidua with the uterine wall; the progress of the labour also separates the amnion from the chorion. Roemer explains the separation of the membranes from one another by their unequal elasticity, and Professor Lazarevich believes that the chorion, being less elastic as well as more easily torn than the amnion, is frequently ruptured in several different places, some portions coming away attached to the amnion, and some being left behind attached to the uterus. The causes of retention of the chorion with the decidua are: (1) the presence of villi on the chorion; (2) extravasation of blood on the decidua, with consequent formation of fibrous adhesions; and (3) adhesions in consequence of endometritis and choriitis. The amnion may be retained in consequence of—(1) occasionally occurring adhesions between it and the chorion and decidua; (2) early rupture and escape of all or part of the liquor amnii; (3) a low attachment of the placenta or placenta prævia; (4) intra-uterine manipulation; (5) anteversion of the uterus after the birth of the child; (6) exceptional weakness or thinness of the amnion. Retention of the decidua (which is formed from the uterine mucous membrane, not from the ovum) is as a rule of little moment, though it is perfectly possible for endometritis decidualis to occur, and for the retained portions of the decidua to serve for the development of micro-organisms introduced from without. Shreds of the chorion, if retained either by themselves or together with the decidua, do little harm, as they rapidly undergo chemical and mechanical destruction, and are carried away with the lochia. The amnion, when retained, is much more liable to become the developing ground for bacteria, and it is to the retention of this part of the membranes that alarming symptoms are usually due. Professor Lazarevich lays considerable stress on the importance of straightening or replacing the uterus in its proper position after the birth of the child, before the after-birth comes away.

THE JUBILEE AND LONDON HOSPITALS.

WITH the exception of one or two schemes for commemorating the Jubilee of Her Majesty which it is understood have her special favour, there is no other suggestion more popular or more worthy of support than that the moneys raised should be devoted to the relief and support of the great hospitals, which constitute the home of the working classes when afflicted and disabled by illness or accident. This proposal has had our steady and earnest support. It would indeed be a Jubilee to be remembered till a similar Jubilee should occur if these institutions could be relieved of the incubus of debt which depresses them and hampers their operations. The schemes specially favoured by the Queen should be supported for their own sake and out of respect to Her Majesty's wishes. But the public must not forget one claim which, above all others, should command their practical sympathy—the claim of the great hospitals, which now languish for want of money, and whole wards of which have to be closed. The rich and the poor alike admit their indebtedness to these institutions. We can only hope that attention may be concentrated on this subject. The Jubilee is a great and august occasion; it will commemorate much, and will, we trust, be productive of real and permanent benefit. But it is weakened by multiplying modes of commemoration, and by fantastic ones. On this proposal—to free the great hospitals of debt—we are on a rock, and on this rock we would rest the Jubilee Fund. Her Majesty has not so far felt at liberty to indicate her special support of it, but her sympathetic nature is too strong to allow us to doubt that any object could be more satisfactory to her than the welfare of our hospitals.

DRUNKENNESS IN 1886.

THE report just published of the number of arrests made on Sundays for drunkenness in the year ending Sept. 29th last affords some ground for congratulation on the improvement in this respect which is undoubtedly taking place in our national manners. That a change for the better has occurred in recent years, and is still in progress, is matter of common observation and attested by many indications. The new report shows in the most satisfactory way that this improvement is general in its character, being exhibited by all classes of the people and all parts of the area under observation. An absence of summary and comparative tables makes it a little difficult to perceive at a

glance what is the exact meaning of the figures given, but it is evident upon the face of them that they mark an improvement upon previous years, for in almost every case the number of arrests grows steadily less from year to year; and this in spite of increase of population. Thus, for the whole of England and Wales the figures are—for 1884, 15,942 convictions; for 1885, 14,658 convictions; for 1886, 12,917 convictions. Here it will be seen that the number of convictions has been actually reduced in two years by 3000 odd, or nearly 19 per cent. If allowance were made for the increase of population within the same period, the ratio of improvement would be seen to exceed this figure. As might be supposed, the return shows a much higher proportion of drunkenness in the case of urban than in that of rural populations. In agricultural districts the convictions vary from one in ten thousand to one in a hundred thousand inhabitants, whereas in the metropolis they run as high as one in fourteen hundred, and at Manchester, which enjoys an unenviable pre-eminence in this respect, they reach the appalling figure of one in three hundred and fifty. Altogether, Lancashire, with its teeming population and its laborious industries, makes but a poor figure in this report. The one satisfactory feature in its record is that it has fully shared in the improvement of recent years. It must, of course, be borne in mind that police supervision is much more efficient in these districts, where vast populations are crowded thickly together, than in sparsely occupied rural parts; but when all allowance is made for considerations of this sort, it is quite clear, even on a mere comparison of different towns, that there are localities, and especially in the mining districts, which in point of sobriety lag far in the rear of our civilisation.

CONDURANGO IN CANCER OF THE STOMACH.

FIFTEEN years ago there was introduced from Brazil a remedy which was claimed to be a specific for cancer. Since then, as before, other remedies have been similarly vaunted, and none have stood the test of experience. The remedy in question was condurango bark, of which a trial was made at the Middlesex Hospital, the negative results being read before the Clinical Society by Messrs. Hulke and De Morgan (Clin. Soc. Trans., vol. 5). In Germany almost the only favourable report came from Professor Friedreich, who related instances of its value in gastric cancer. Since then it has fallen much into disrepute, having been regarded as little better than a stomachic, and prescribed thus with advantage (Wilhelm: Year-book of Treatment, 1886, p. 49) in cases of carcinoma and ulcer. But Dr. Riess of Berlin has just published (*Berl. Klin. Wochensch.*, March 7th) some striking testimony to the value of the drug in gastric carcinoma, more conclusive than any that has hitherto appeared. It is noteworthy that he doubts whether its qualities as a stomachic are better than those of other drugs of that class, and that he has not found it efficacious in cases of cancer where the stomach is not primarily involved. (Messrs. Hulke and De Morgan's reports did not deal with gastric cancer.) It was in cases presenting the symptoms of cancer of the stomach (many with a tumour) that the best effects were noticed. In 105 such cases—i.e., where gastric cancer was diagnosed—treated at the General Hospital from 1878 to 1886, condurango was prescribed, and in no case, even in those in the last stage, without some effect. The drug was often given every hour—the total amount per diem reaching ten grammes of the decoction—and continued for long periods without ill effect. The appetite improved in a few days, vomiting and pain diminished, and eventually ceased, and the patient gained in weight. Whether life is actually prolonged is, of course, difficult to prove; but Riess quotes statistics which show that the cases treated with condurango, both the fatal ones and those discharged in improved health, remained much longer in hospital than those not treated by the drug. He even states that of sixty-four cases in which a palpable tumour was present, in seventeen it diminished in size, and in eight quite disappeared; and he details three cases of such disappearance of obvious tumour, which, subsequently dying, presented only cicatricial structure, with no trace of malignant disease. Obviously, before we can accept such cases as examples of the *cure* of cancer we must be certain that the original diagnosis was correct, and the same scepticism may be allowed respecting the whole series of cases. For cancer of the stomach may not only be latent, but may be simulated by non-malignant ulceration, as every physician knows. Dr. Riess fairly discusses this point, being quite alive to the objection. He claims, at least, that condurango has some local effect upon a diseased stomach, and considers that in all suspected cases it should be prescribed. It need hardly be pointed out that a local action as here claimed is a very different thing from a specific action in cancer generally, which was sufficiently disproved by the observations at the Middlesex Hospital.

THE "RELATIVE RANK" QUESTION.

WE see no reason to modify the opinion we have already expressed, and which is fully borne out by the statement of the Secretary of State for War in the House "that the abolition of the term 'relative rank' had not altered the position of the medical officers in any respect whatever." It must not be lost sight of that the abolition of the *term*—for the *fact* of the existence of relative rank must exist so long as medical officers are placed in relation to other officers—is not confined to medical officers alone, but applies also to the officers of the Adjutant- and Quartermaster-General's staff and to all the departments of the army. It is difficult, therefore, to understand how the change can be deemed derogatory to medical officers. But this would seem to be the view advanced by those who have called in question the good faith of the authorities in this matter. The fact is, that so much distrust has been engendered in the Army Medical Service by past experience, that we cannot be surprised at its sensitiveness to, and suspicion of, any changes likely to affect it in any way; and undoubtedly the result of the statements put forth, unfounded though they be, has been to create a strong feeling of that nature on the part of the medical officers. It would be perfectly easy, as it appears to us, for the Secretary of State to issue a satisfactory official statement on the subject by so far altering the wording of the Warrant as to prevent its being misinterpreted. This could be effected by a clause enacting that "the respective grades in the Army Medical Staff shall take rank with, and carry all precedence and advantages attaching to, corresponding military rank," and following this up with the classification laid down in paragraph 125*a* of the Warrant. We cannot see any difficulty in such a course, and it would remove all ambiguity as to the position of the medical officers.

RUPTURE OF THE INTESTINE.

ON March 6th Mr. John Croft of St. Thomas's Hospital performed abdominal section on a patient aged thirty-four, who had been admitted with acute peritonitis due to injury received about eighteen hours previously. The patient, who had received severe injury to the abdomen the night before, walked to the hospital. He had vomited, and in addition to the symptoms of most acute peritonitis and a temperature of 103°, had some dulness in the hypogastric region. A rent was found almost dividing the small intestine; there was feculent material in the peritoneal cavity, and acute inflammation in the neighbourhood. The peritoneum was washed out with a 20 per cent. solution of boracic acid, and the intestine sutured to the wound. Since the opera-

tion his progress has been very satisfactory; he has had neither pain nor vomiting, and the distension of the abdomen has disappeared. Although he was complaining of cough and had a rapid pulse, his condition was otherwise favourable on the 10th. The same surgeon operated on the 4th in a case of abdominal injury, accompanied by much hæmorrhage into the peritoneal cavity, and removed the spleen, the hæmorrhage being due to an extensive laceration of that organ. The patient, however, did not survive the loss of blood and the additional shock of the operation.

THE MINUTE ANATOMY OF THE BRACHIAL PLEXUS.

A PAPER of some interest appears in the forty-first volume of the Proceedings of the Royal Society, under the authorship of Dr. W. P. Herringham. The results were obtained from careful dissections, partly of fœtuses or still-born children and partly of adult subjects. The following conclusions were arrived at:—1. Any given (nerve) fibre may alter its position relatively to the vertebral column, but will maintain its position relatively to other fibres. 2. Of two muscles, or of two parts of a muscle, that which is nearer the head-end of the body tends to be supplied by the higher, that which is nearer the tail-end by the lower, nerve. 3. Of two muscles, that which is nearer the long axis of the body tends to be supplied by the higher, that which is nearer the periphery by the lower, nerve. 4. Of two muscles, that which is nearer the surface tends to be supplied by the higher, that which is further from the surface by the lower, nerve. The next conclusions relate to sensory nerves. 5. Of two spots on the skin, that which is nearer the pre-axial border tends to be supplied by the higher nerve. 6. Of two spots in the pre-axial area, the lower tends to be supplied by the lower nerve, and of two spots in the post-axial area, the lower tends to be supplied by the higher nerve.

THE PORT OF LIVERPOOL.

OUT of 20,928 vessels entering the port of Liverpool during 1886, 4120 were inspected by the sanitary officers, and 276 were found to be defective. The coasting trade is now largely carried on by steamers, and the accommodation for the crews is stated to be both good and double that which is usually provided. The steamers carrying Lascars were also found to be in fair condition, and in no case was any infectious disease found on board. The number of emigrants was large, reaching 191,491; and the American Government have acted wisely in appointing medical inspectors to examine those going to that country, in order to ascertain if any of them have come from infected districts. If they have, measures of disinfection and other precautions are adopted; and some intending emigrants have, in the first instance, been isolated in hospital. During 1886, the number of cases of infectious sickness found on board was forty-six, and in a majority of instances removal to hospital was adopted by Dr. Stopford Taylor.

CANCEROUS AXILLARY GLANDS.

AT the Harveian Society, on the 3rd inst., the entire evening was taken up in the discussion of an extremely practical paper by Mr. Mitchell Banks, upon the advisability of extirpating the axillary glands in all cases of amputation of scirrhous mammæ. Mr. T. Bryant went a considerable way with the author in his bold and thorough treatment, but felt that there must still be a considerable number of patients for whom the old-fashioned or incomplete operation would be preferable. Mr. Pick took exception to much of the argument put forward in the paper, as also did Messrs. Butlin and Cripps. The latter two gentlemen brought forward statistics from St. Bartholomew's Hospital and elsewhere which differed widely in percentage results; Mr. Cripps' figures, indeed, offered considerable support to Mr. Banks' views. Mr. T. Smith suggestively remarked that surgeons must not lose sight of the fact that many women are living in comparative comfort who for years have been the subjects of cancer of the breast which has never been subjected to any surgical treatment. This Mr. Banks readily accepted, and remarked that far better was it to leave the patient alone than to inflict on her any incomplete operation. The President (Mr. Edmund Owen) expressed himself strongly in favour of opening up and clearing out the axilla in every operation for mammary cancer, whether enlarged glands have been previously felt there or not.

THE NEW PHARMACY BILL.

A BILL has been introduced in the House of Lords by the Earl of Milltown, under the title of the 'Pharmacy Acts Amendment Bill," to amend the Pharmacy Acts of 1852 and 1868. It is proposed to provide for the division of the examination into preliminary and other parts, and to make it incumbent on candidates presenting themselves for the final test to produce certificates of having attended a course of lectures on materia medica, botany, and chemistry. They must also have served for a period of not less than three years as pupils or apprentices in the shop of some duly-qualified chemist or druggist. The Pharmaceutical Society of Great Britain is to be entrusted with the power of regulating these examinations, and the Council of that body may, under certain circumstances, waive the whole or any part of the term of apprenticeship, provided they are satisfied that the candidate has by other means received adequate instruction. It is not intended that the Act shall apply to Ireland.

DEATHS OF EMINENT FOREIGN MEDICAL AND SCIENTIFIC MEN.

THE deaths of the following foreign medical and scientific men are announced:—Professor Arlt, the eminent oculist, at Vienna, on the 7th inst., at the age of seventy-five, after a long illness. Dr. Reinhold von Reichenbach, whose name is well known in the chemical world, on Feb. 23rd, at Gratz. Professor August Wilhelm Eichler, director of the Royal Botanic Garden and Museum at Berlin, at the age of forty-nine. Dr. A. Borodin, professor of Organic Chemistry in the Military Medical Academy of St. Petersburg.

THE EXISTENCE OF PEPSINE AND TRYPSINE IN URINE.

DR. VASILEVSKI, at Professor Chudnovski's suggestion, recently undertook some observations on the urine of twenty patients suffering from various diseases, in order to confirm the statements made by a number of authors—Brücke, Grützner, Sahli, Leo, Mya, Belfanti, and others—as to the constant existence of pepsine and trypsine as urinary constituents. He found that in both healthy and diseased states pepsine in greater or less quantity was constantly present. The smallest quantity was found in patients who were badly nourished, the state of nutrition of the body having apparently more influence upon the amount of pepsine in the urine than the nature of the disease. The least quantity of pepsine was found in the urine of a patient with pulmonary phthisis four days before death, and in that of another who suffered from carcinoma of the pylorus. In this case the pepsine was greater in amount when the pylorus was pervious and less when it was impassable and the patient vomited matter in a high state of fermentation. A high body temperature appeared to lessen the pepsine. In three

cases in which the urine contained albumen, the quantity of pepsine coexisting with it appeared to be much the same as might have been expected from the state of the patient's nutrition if there had been no albuminuria. In regard to trypsine Dr. Vasilevski was unable to obtain definite results.

THE MARGARET STREET INFIRMARY.

AT a meeting of the Medical Board of the North London Consumption Hospital, held on Monday last, the following resolution was carried:—

"That the medical staff of the North London Hospital for Consumption and Diseases of the Chest are unanimous in their sympathy with the action of the members of the Margaret-street Infirmary—Drs. Hawksley, Cholmeley, Carr Beard, Phibbs, Willis, Walford, and Powell—who lately resigned their appointments under painful circumstances; and, further, that the secretary be instructed to forward a copy of this resolution to Dr. Hawksley, late senior consulting physician to the infirmary, and ask him to convey the substance of this resolution to his former colleagues."

We are glad to see the above timely expression of sympathy on the part of the medical staff of the North London Hospital for Consumption. It will no doubt be gratifying to Dr. Hawksley and his late colleagues. Meanwhile, it would be interesting to know what effect the resignation of these gentlemen will have on the position and future management of the Margaret-street Infirmary.

GASTRITIS IN RENAL DISEASE.

IN a paper read before the Société de Biologie (*Le Progrès Méd.*, No. 9), M. Pilliet described the lesions of the gastric mucous membrane in the dyspepsia of renal and urinary disease. The lesions—observed in a large number of cases of different kinds of renal disease—comprise infiltration of the connective tissue in the round and fusiform cells in groups between the glands or in bands along the vessels The gland tubules are diminished in number, much shortened, often dilated at their lower extremity, flattened superficially, and variously contorted. The cubical or prismatic cells are ill developed, as in the new-born, and show little or no formation of Nussbaum's peptic granules. The changes are best marked in interstitial nephritis, and resemble those described by Parrot in athrepsia, those met with in chronic alcoholic gastritis and in cirrhosis of the liver, and in gastritis of tubercular subjects.

BURIAL REFORM.

THE reply given by Mr. Plunket in the House of Commons to the question recently put to him by Mr. Baggallay respecting Brompton Cemetery suggests very serious reflections as to our present mode of burial. From that reply (a note of which appeared in THE LANCET of the 5th inst.) it appears that the cemetery contains in all 38 acres and 20 perches, and that there now remain 4 acres and 34 perches available for burial purposes. The space already used is therefore less than 34 acres, and in this there have been buried the enormous number of 135,617 bodies, an average of 3988 per acre. It has been calculated that 1000 graves can be made in every acre of land set apart for burial purposes, leaving a reasonable margin for spaces between graves, walks, &c. Hence, as the depth of graves is often eleven or twelve feet, and sometimes even deeper, the figures, large though they at first appear, are not excessive. Nor would there be anything to fear if it were the truth that all these bodies are really buried. But, as Mr. Seymour Haden has said, speaking of modern burial, a large proportion cannot be considered as buried at all. The first burial in Brompton cemetery took place in 1840, and, as it has always been what may be termed a fashionable place of interment, the probabilities are that a large proportion of the burials have been in lead coffins and in vaults or bricked graves. The result is, as it always must be when the dead are disposed in this manner, that the cemetery becomes filled with what Mr. Haden severely, but truly, describes as a mass of boxed-up putridity. It appears, moreover, that the burials therein still average in round numbers 5000 yearly, and that the Government derived last year a profit of £7070 from the cemetery. Considering all these circumstances, and also how completely the cemetery has become surrounded by dwellings it appears only reasonable that, if burials are to continue there every inducement should be made by reduced tariff &c. to bury in perishable coffins and in graves. It would indeed be well if all existing vaults or bricked graves could be converted into real graves by filling them up with earth or charcoal, so as to neutralise the poisonous gases which must sooner or later pass through the best soldering or most perfect cement. Meanwhile, much may be done by the force of example, and if the friends of the next titled and other celebrities who may be buried there would set the example of burial in perishable coffins, and in the earth, the example would soon be followed.

RUPTURE OF THE BLADDER.

A PATIENT was admitted into St. Bartholomew's Hospital on the morning of March 1st with symptoms of a ruptured bladder, in consequence of a blow on the hypogastrium whilst the bladder was distended. The injury had been received the previous evening, and Mr. Walsham operated soon after admission. A large quantity of urine escaped from the peritoneal cavity when the abdomen was opened, and a rent about an inch and a half long was found in the bladder wall. Sutures were used, passing through the peritoneal and muscular coats only; the abdominal cavity was irrigated with a 1 per cent. solution of boracic acid, and the abdominal wound closed as after ovariotomy. The patient suffered very little shock, and passed his urine naturally without the aid of a catheter every four hours. There has been no sign of peritonitis, and he may be looked upon as convalescent.

DENTAL IRREGULARITY.

MR. CHARLES TOMES, in his presidential address delivered at the Odontological Society, spoke of the influence of heredity in the production of dental irregularities. He does not believe, as has been maintained, that these deformities are things of quite modern date and due to disturbed innervation, the result of over-pressure (like the headache of Board School children), and points to the portraits by Vandyke at the Grosvenor Gallery and the exhibition of the old masters at the Royal Academy as showing several examples of dental irregularity, such as underhung jaw and protrusion of the upper incisors.

TREATMENT OF CHOLERA IN BUDA-PESTH.

IN a paper lately read before the Royal Buda-Pesth Medical Society, Dr. B. Anayán gave some particulars of the results of various kinds of treatment during the recent cholera epidemic in Buda-Pesth, an epidemic which he considered to have been of a mild character. He divided his cases into four groups—viz., 76 of choleraic diarrhœa, 85 of cholerine, 90 of slight cholera, and 454 of severe cholera. In the first three groups and in 180 of the cases belonging to the fourth group he employed only enemata; in the rest he employed, besides enemata, hypodermic injections of tannin and opium, corrosive sublimate, or hydrochloric acid. The results were that the cholerine and choleraic

diarrhœa cases were all cured, and 63·6 per cent. of the slight cholera cases, but only 20·7 per cent. of the severe cases, which were treated with enemata only, so that in all the milder forms enemata had proved most successful. In the severe cases where hypodermic injections were used 38·6 per cent. recovered.

TRAVELLING MEDICAL REFEREES.

ACCORDING to information from colonial sources, the lot of medical officers attached to some Australian insurance companies is far from being a happy one. The "travelling medical referee" is one of those persons upon whose judgment and integrity the success of such associations chiefly depends. His position, privileges, and emoluments unfortunately stand in a nearly inverse ratio to the value of his services. These consist in making a series of professional visitations in town or country in company with an agent, who canvasses the inhabitants in favour of the office which he represents. The agent is commonly a hail-fellow-well-met, and the medical examiner frequently finds it almost obligatory to conform to the rough free-living customs of a young and growing colony. Of work and fatigue he has more than enough, food is apt to be inferior, and accommodation is but another name for barbaric dirt and roughness. The pay allowed is in some cases not illiberal, provided that business is brisk; in others it does not vary with the market, but is fixed at the low rate of four guineas per week. As to provision in case of accident or illness, the principles of the society do not, as a rule, stretch as far as the requirements of its medical referees. Altogether the life of these gentlemen appears to present few, if any, enviable features.

HYPODERMIC INJECTIONS IN ACUTE ANÆMIA.

DR. PREGALDINO of Ghent, taking into consideration the observations of Kronecker, showing that in acute anæmia death is not directly due to the want of oxygen owing to the paucity of the blood-corpuscles, but to the diminution of pressure in the bloodvessels, suggests that in these cases pressure may be restored either by intravenous injections, or, more simply and less dangerously, by hypodermic injections into the cellular tissue. He made observations on eighteen dogs, injecting into the cellular tissue a solution of common salt of the strength of 6 per 1000, and warmed to 37° C. This he found was very quickly absorbed, raising the blood-pressure in a quarter of an hour. Dr. Pregaldino has been requested by the Royal Belgian Academy of Medicine to continue his experiments.

MEDICAL HONOURS IN ITALY.

KING HUMBERT (*motu proprio*) has nominated Surgeon-Major Francesco Guerriero Chevalier of the Order of Saints Maurice and Lazarus, in consideration of professional duty heroically discharged in the Abyssinian campaign. Similar honour, equally merited, will, it is understood, be shortly conferred on others of the profession who have, at great risk to life and limb, saved many sufferers from the recent earthquakes in the Ligurian littoral.

ELECTROLYSIS OF AN ANEURYSM IN SPAIN.

DR. BERNARDO DIEZ OBELAR of Molinaseca publishes in *El Siglo Médico* the notes of a case of aneurysm of the first part of the aortic arch in a military officer, which produced dysphagia and terrible suffering, and required immense doses of morphia, so that the patient entreated that some operation might be performed, expressing himself as ready to run any risk in the hope of obtaining some relief. Electrolysis by means of needles was therefore resorted to, a Spamer battery being used. At first the maximum number of cells employed was ten, but in the later sittings twenty were brought into action. Some slight effect was produced, the tumour becoming small and more solid; the distressing dysphagia also diminished, but the pain remained as severe as before.

MEDICAL ATTENDANCE ORGANISATION COMMITTEE.

THIS Committee met on Tuesday, Sir Spencer Wells presiding. The principal resolutions were to the following effect:—That persons joining were to be approved by the medical officer under whom they wish to be registered. The question of an entrance fee was postponed, except for emergency cases, and, after much discussion of several amendments, the following resolution was passed: "Persons requiring immediate attendance must pay an entrance fee of 2*s.* 6*d.*, which shall entitle them to treatment for one week, after which, should they continue ill, they shall pay 1*s.* per week if able to call on the doctor, and 2*s.* 6*d.* if visited at home. Upon recovery they shall be expected to continue as ordinary members with the consent of the medical officer." A further resolution was passed to guard the medical officers and the institution against an influx of chronic cases on ordinary terms, but providing for their admission at special rates, subject to the approval of the medical officer. It is necessary to remember that all these resolutions apply to persons whose wages do not exceed 30*s.* (for single persons), or 45*s.* (for a family). At the next meeting the questions of midwifery fees, general rules, fines, &c., are to be disposed of, after which it is hoped that the great point of a union between hospitals and provident dispensaries may be reached. Several hospital physicians are expected to take part in the discussion.

THE NEW EXAMINATION HALL.

ON and after Monday next, the 14th inst., the business of the examinations for diplomas of the Royal Colleges of Physicians and Surgeons of London under the old regulations, as well as under those of the Examining Board, will be conducted in the new Examination Hall, situate, as our readers are aware, on the Victoria Embankment.

ALLEGED INACCURATE CERTIFICATION OF DEATH.

AT a recent meeting of the Dartford Petty Sessions, Mr. Thomas Wheeler, medical officer of health for Bexley, was charged on a summons with making and issuing a false certificate of the death of a woman named Asker. For the prosecution it was stated that Mr. Wheeler certified that he had seen the deceased on Dec. 24th, when as a matter of fact he had seen her on the 19th. For the defence it was contended that the object of the Births and Deaths Registration Act was simply to ascertain the cause of death, and if this were correctly given no medical practitioner could be compelled to give other particulars. The magistrates accepted this view, and on the facts dismissed the summons, making, however, no order as to costs.

FINE FOR FALSE USE OF MEDICAL TITLES.

ON the 3rd inst. David Thomas of Peckham-rye—who must not be confounded with Mr. R. W. Thomas, L.R.C.P. Ed., of Temple Villa, Rye-lane—appeared to an adjourned summons, taken at the instance of R. H. S. Carpenter, for having on January 31st unlawfully taken a title, that of "Dr.," implying that he was registered as a medical practitioner, under the Medical Act of 1858. Mr. Pridham showed that the defendant said, in answer to a question, that he was "Dr. Thomas." This was denied, but the

magistrate, Mr. Chance, decided that the Act had been violated, the object of which was to enable the public to distinguish between qualified and unqualified medical men. The defendant was ordered to pay £3 fine and £4 costs, but an appeal was granted.

THE BRITISH MEDICAL ASSOCIATION.

AT the fifty-fifth annual meeting of this Association, to be held at Dublin in the first week of August next, Dr. John T. Banks, Regius Professor of Physic in the University of Dublin, will succeed Dr. Withers Moore as President. The Address in Medicine will be delivered by Dr. W. T. Gairdner; the Address in Surgery by Dr. E. Hamilton; and the Address in Public Medicine by Dr. S. Haughton. Dr. G. F. Duffey will act as local hon. secretary.

A NEW SKIN HOSPITAL.

WE have received intimation by a paragraph, which seems meant for the press generally, that it is intended to set up a new Skin Hospital in Cranbourne-street, Leicester-square, to be "promoted by Mr. James Startin and Mr. Walter Pocock, for the gratuitous treatment of poor persons suffering from skin disease." We trust this proposal will be reconsidered. Leicester-square is already blessed with a Skin Hospital, and it is a poor compliment to it to erect another. Besides, the whole charity of the community just now is taxed to the utmost to sustain those great general hospitals where skin disease can be treated with reference to its constitutional bases. Mr. Startin will agree with us, too, in thinking that hospitals should be "promoted" by the public, and not by members of the profession. For all these reasons, and others, we trust that Mr. Startin and his friend will abandon a project which is not likely to succeed, and which would only injure other institutions, where their knowledge of skin disease might be exercised with greater advantage to the community and to the poor.

TYPHOID FEVER AT MEXBOROUGH.

AT a recent meeting of the Mexborough Local Board of Health, Mr. Sykes, the medical officer of health, reported that since the commencement of the outbreak, which had principally centred itself at Sparrow Barracks and Clay-lane, there had been a total of eighty-five cases. Of these, four had died and eighteen remained ill. Since then three fresh attacks had been heard of. The Local Government Board are pressing on the authority the action recommended to them by Mr. Spear of their medical department, and locally some preliminary action has been decided on as to the establishment of an Isolation Hospital, which, it may be hoped, will in the future aid in staying the progress of such epidemic diseases as that from which the town is suffering.

A CASE FOR INQUIRY.

THE name "Dr. T. Young, L.R.C.P., L.R.C.S., L.M.," is paraded in the large paragraph advertisements of Mr. E. W. Alabone, to whom allusion was made in our last issue. We ask why the Colleges from whom "Dr. T. Young" obtained his diplomas have not inquired into the matter.

CHOLERA IN SICILY.

CHOLERA is stated to be still prevalent at Catania in Sicily, although the number of cases and deaths is not numerous. According to information from Rome, six more attacks, of which four were fatal, were announced on the 5th inst.

FOREIGN UNIVERSITY INTELLIGENCE.

Basle.—A new ordinary professorship is about to be created, which, strange to say, has not up to the present time existed—namely, that of Midwifery and Gynæcology. The number of medical students has increased since 1862 from 30 to 130. Up to 1873 there were only four professors, now there will be seven.

Berlin.—Professor Gusserow has been selected to fill the chair of Obstetrics vacant by Professor Schroeder's death, the name of Professor Winckel of Munich being mentioned for Professor Gusserow's post.

Bonn.—Professor Ludwig of Giessen has been appointed Professor of Zoology and Comparative Anatomy.

Leipsig.—Dr. Benno Gottlob has been granted the position of Honorary Professor. Professor Hankel, Chief of the Physical Institute, has retired, being in his seventy-third year.

Montpelier.—The chair of Pathological and Histological Anatomy is vacant.

Nancy.—A serious fire has occurred in the buildings belonging to the Faculty of Medicine, the laboratory and collections belonging to the therapeutical department, as well as the natural history collections, having been destroyed.

Paris.—The Faculty of Medicine has thus arranged the candidates for the office of Dean: (1) M. Brouardel; (2) M. Jaccoud.

Zurich.—Professor Wyss is to have charge of the new Hygienic Institute.

A LARGELY attended meeting of the Portsmouth Hospital committee was held on the 4th inst., to consider the proposal made by the Admiralty in reference to reopening the lock wards. The Admiralty offered to contribute £35 a year for each bed occupied, provided the number did not exceed thirty, while the minimum contribution should be for fifteen beds, whether occupied or not. The committee agreed to accept the offer if the minimum number was increased to twenty-five and the maximum to thirty-two, without any reference to compulsory powers. It was stated that there are at the present time close upon 300 of this class of cases at Haslar Naval Hospital, and that the disease is so prevalent that only the worst cases could be received at the Station Hospital, Portsea; also that while there were only twelve of these patients at the workhouse in 1882, there are now fifty-five.

A BILL has been prepared for presentation to Parliament by the friends of some of the London and other hospitals which proposes "to restore the exemption from taxation which charitable institutions enjoyed for 250 years," but to which it is alleged they have been subjected since 1866 owing to the decision of the House of Lords in the case of the Mersey Docks and Harbour Board.

ON April 27th the Senate of the University of London will elect examiners in the departments of Arts and Science, Laws, Medicine, and Music. In the medical department two examinerships in Medicine and one in Forensic Medicine are vacant, the retiring examiners being eligible for re-election, and intending so to offer themselves.

IT is stated that Sir W. Foster, M.D., will be asked, after the funeral of the late member for the Ilkeston division of Derbyshire, to become the Liberal candidate for that constituency.

ON the 4th inst., at the Royal Institution, Mr. Victor Horsley, F.R.S., delivered an address on "Brain Surgery in the Stone Age."

HERBERT PERCY FREUND, who has been repeatedly charged with creating disturbances at St. Paul's Cathedral, was again charged with the same offence on the 7th inst. Medical evidence was given on the question of the sanity of the defendant, and, no evidence being offered by the authorities of the Cathedral, he was discharged.

As will be seen by an announcement in our advertising columns, a change has been made by the Senate of the University of London in the time of holding the next Matriculation Examination—viz., from the week commencing Monday, June 20th, to the preceding week, commencing June 13th.

AN important inquiry has been opened by Mr. S. J. Smith, civil engineer, of the Local Government Board, as to the sewerage of West Cowes. The proposed scheme is a costly one, and meets with considerable opposition. The inquiry stands adjourned to March 19th.

DR. HUNTER STEWART and Mr. COSMO BURTON are engaged in making an analysis of the air of Edinburgh. A report on the whole work will be submitted to the Public Health Committee as soon as the investigations are completed.

A BILL to amend the law relating to the election of coroners will be introduced in the House of Commons to-night (Friday) by Mr. Wootton Isaacson.

DR. SAMUEL FENWICK has been elected a member of the Royal Institution of Great Britain.

Pharmacology and Therapeutics.

CHAPOTEAUT'S MORRHUOL.

THE difficulty frequently experienced by patients in taking cod-liver-oil has induced M. P. Chapoteaut, the well-known pharmacist of Paris, to turn his attention to the subject, and he has recently introduced a preparation of this valuable remedy, which proves to be of considerable utility in the treatment of phthisis and other wasting diseases. The active principle, if such it may be called, is extracted and enclosed in capsules, which, in the words of the prospectus, have "the advantage of possessing in a small volume the curative medicinal properties without the inconvenience of the oil." It is claimed for morrhuol that it represents twenty-five times its weight of the crude drug. Professor Germain Sée and his colleague, Dr. Labadie-Lagrave, in the fifth edition of their clinical lectures recently published, speak highly of extract of cod-liver oil, and assert that it is not only tolerated without difficulty, but is readily absorbed. We find that some patients take the capsules who certainly would not take the oil. Whether morrhuol is equally efficacious as a therapeutic agent remains to be seen, and can only be determined by a series of clinical observations extending over many months. We think, however, that we are justified in calling attention to what may prove to be a new departure in the treatment of certain intractable diseases. The capsules may be obtained direct from M. Chapoteaut, 8, Rue Vivienne, Paris.

MELON ROOT AND OIL OF BEN (MORINGA APTERA).

The above possess purgative and emetic properties. An emetic principle has been extracted from the root by Torosicviez. A solution containing nine centigrammes of it is, says the *Pharmaceutical Journal*, sufficient to induce emesis. Fifty centigrammes of powdered root is necessary to cause vomiting.

HASCHISCH PURUM AND CANNABINON.

This is a preparation of cannabis indica prepared by treating the alcoholic extract of Indian hemp with caustic alkali, by which all acid ingredients are solved. The brown soft resinoid residue is "pure haschisch," and is composed of the soft resin cannabinon and the alkaloid tetanine. It is insoluble in water, but forms golden-yellow solutions in alcohol, ether, and chloroform. A third of a grain is said to act as a cerebral stimulant, and a larger dose causes all the symptoms, including sleep, of Indian hemp. The drug should be in a fine state of division, and may be given in pastille form, with powdered cacao or roasted coffee as a vehicle. Tannic acid dissolves out the alkaloid on which the stimulant action depends, whilst the remaining cannabinon has the narcotic property. Cannabinon is triturated with sugar of milk in the strength of 10 per cent. Made up with cocoa or coffee in pastile form, it may be given as a hypnotic, in doses of one-half to one grain and a half, especially for hysterical or insane patients, but it is contra-indicated when heart-disease exists.—(*Pharmaceutical Journal.*)

THE USE OF IODOL IN BELGIUM.

Dr. Edouard de Smeth, in a clinical lecture on iodol given at the Hospital of St. Pierre, Brussels, details several cases of syphilis and soft chancres in which iodol proved very useful. In one of these, iodoform had first been used, but had to be abandoned because of the objection made to its smell by the landlord of the hotel in which the patient was staying. The lecturer also mentioned a case of very obstinate varicose ulcers which had been treated with great success by one of his colleagues by an ointment composed of five grammes of iodol in thirty grammes of lard. He says that iodol is prescribed in Belgium by Dr. Coppez in various ophthalmic cases, by Dr. Houzé in tubercular ulceration of the throat, and by Dr. Lebrun in the form of ethereal injections in endometritis, also by others in various affections under the forms of iodol-collodion, iodol-bougies, &c. In addition to the experiences of Belgian surgeons, those of foreign observers were mentioned, especially those of Marcus of Pyrmont, showing by injections of iodol and iodoform in animals that iodol is far less poisonous than iodoform.

VASELINE FOR HYPODERMIC MEDICATION.

This method of hypodermic medication is extending, especially in France, where it is advocated by M. Meunier, of Lyons, as a vehicle for the introduction of active principles into the system. It is contended that vaseline is absolutely harmless to the tissues, and may be employed in large doses without causing accidents. But the vaseline must be perfectly pure. Pure vaseline treated with warm sulphuric acid does not blacken, but any impure specimen would. Eucalyptol has been thus employed in phthisis, and turpentine in sciatica. Iodoform, phenol, iodine, and camphor may be injected in the strength of 1 per cent., and thymol in ½ per cent., or menthol 10 per cent.

RHUS AROMATICA FOR NOCTURNAL ENURESIS.

A fluid extract has been sent into the market by Parke, Davis, and Co. It is prepared from the cortex of the root of the rhus aromatica, sweet sumac. It acts on the plain muscular tissue of the bladder, uterus, and rectum, and may be employed to check hæmorrhages in these situations. Atonic dyspepsia is said to have been relieved by it. Dr. Unna, after a trial of three years, believes the extract to be very efficacious in the nocturnal enuresis of children. Five drops may be given morning and evening to a boy two years old, and ten-drop doses to children of six.

SALICYLATE OF SODA IN GONORRHŒA.

Dr. Avsitidiski recommends salicylate of soda in gonorrhœa; the quantity he gives is thirty grains a day dissolved in linseed-tea. The way in which this acts is by being eliminated by the urine, and thus washing out the urethra with an antiseptic solution. Dr. Avsitidiski tried the effect of a 2 per cent. salicylate of soda solution as an injection, and found that it acted similarly to a solution of boracic acid of the same strength, rapidly changing the puriform secretion to one of a mucous character.

MENTHOLEATE.

Mentholeate is a solution of menthol in oleic acid, and is recommended by Professor Remington as the best form for the outward application of menthol. Two hundred grains of menthol may be dissolved in half an ounce of oleic acid by heating together in a test-tube.

IODOFORM IN HEART DISEASE.

M. Testa has employed iodoform in cases of organic lesion of the valves. The administration of small doses of iodoform (seven centigrammes—about a grain—in four pilules, one to be taken every two hours) rapidly dissipated the functional derangements dependent on the valvular disease. The experimental results obtained in dogs completely concur with those furnished by clinical experimentation in demonstrating that in dogs iodoform retards the cardiac contractions, and this delay increases the total duration of each cardiac cycle, and also the efficiency of the systole.

PHENOL MERCURY.

The chemical formula of this mercurial compound is C_6H_5 OHg. OH. It is given in the form of pills, each containing two centigrammes of the preparation. Two pills may be given the first few days, and the number gradually increased to six. Salivation and stomatitis are said to be but very occasionally produced.

LOBELINE AND INFLATINE.

These are two alkaloids obtained from the seed of lobelia inflata. The former has powerful emetic properties, and the emesis is not followed by disagreeable symptoms. The powdered alkaloid is very irritant to the nasal passages, perhaps more so than veratrine. The inflatine has not any therapeutic effects, so it is stated.

NASAL POLYPI.

It is recommended by Dr. Bell of Canada to treat nasal polypi by daily injection of tannin, from five to ten drops of a concentrated solution being injected by means of a hypodermic syringe. After a few days of this treatment the polypus sloughs and comes away without bleeding.

THE HIGH ALTITUDE TREATMENT OF PHTHISIS.

(FROM A SPECIAL CORRESPONDENT.)

No. III.

Davos-Dörfli; Frauenkirch; Wiesen; St. Moritz; The Maloja.—Concluding Remarks.

HAVING dealt fully with the general principles of the high altitude treatment of phthisis with special reference to Davos, I shall conclude by a brief consideration of the other Alpine sanatoria. Frauenkirch and Davos-Dörfli need not detain us, being both in the Davos valley and sharing in the general climatic conditions of Davos-Platz. Owing to the rapid increase of patients at the latter village, they are likely to grow in popularity as the opinion gains ground that the aggregation of large numbers of consumptives is a peril to be shunned. Davos-Dörfli has more sunshine, but less shelter than Davos-Platz. The climatology of Frauenkirch is practically identical with that of the parent sanatorium.

Wiesen demands a more extended notice, as it possesses many attractions as a health-resort, and probably has a future before it. Situated on the side of a declivity which slopes abruptly down to the wild gorge of the Landwasser, surrounded by pine woods, and encircled by a range of magnificent snowy peaks, Wiesen possesses all that Alpine charm of scenery which Davos so conspicuously lacks, and is hardly inferior to the latter in all the essential requisites of an admirable sanatorium. It possesses rather more sunshine, an almost equal immunity from wind, and a site superior to that of Davos for the purposes of drainage. From its situation on the brow of a hill overlooking a deep Alpine valley, it might be conjectured that Wiesen would be much exposed to winds, but the gorge of the Landwasser is so deep and its bed so far below the level of the village that the valley wind sweeps past without rising so high as the site of the hotels for invalids. The chief point of difference between Davos and Wiesen arises from the fact that the latter lies at a considerably lower elevation, and hence has a shorter winter and a higher mean temperature, amounting to about 2° (Tucker Wise). The climate is thus milder and less bracing than that of Davos, and hence likely to prove advantageous in those cases where the latter proves too stimulating. There can be little doubt that Wiesen is capable of affording as good results as Davos, and it seems particularly worthy of trial in those doubtful cases where dyspepsia, insomnia, or deficiency in circulatory vigour renders recourse to the mountains a tentative measure. There are two good hotels where ample provision is made for the comfort of the invalid; but the village itself is one of the smallest and poorest in Switzerland, and the visitor must be prepared to dispense with many of the social attractions afforded by Davos. Wiesen can be recommended only to those who are superior to the charms of gaiety, who possess much resource for amusement and occupation in themselves, and who are prepared to make every necessary sacrifice which their condition of health may demand. Wiesen is only eleven miles distant from Davos; hence visitors to the former resort can have their medical wants supplied by the physicians of the latter. Between thirty and forty visitors spent last winter at Wiesen, and the results of treatment are said to have been satisfactory. We are still without definite statistical information on this point. Wiesen is usually approached from Coire, from which it is twenty-four miles distant.

The sanatoria hitherto considered all lie in the same valley, Davos-Dörfli representing its highest and Wiesen its lowest point. I have now to deal with the long famous, and still very important, health-resorts in the Engadine. The valley of the Inn has long been justly celebrated for its magnificent scenery, its mineral waters, and its bracing air. For many years it has been a favourite playground for tourists in the summer and autumn, but it is only since Davos arose into sudden popularity that St. Moritz, Samaden, Pontresina, and the Maloja have put in their claim to rank as winter sanatoria for phthisis. This claim must still be reckoned on its trial, as the results of treatment in the Engadine have hardly hitherto been of a nature to justify the expectation that it will ever supersede Davos. We may safely confine ourselves to the consideration of St. Moritz and the Maloja, as Samaden and Pontresina have grave disadvantages as winter resorts: the former in its windiness; the latter in the contour of the surrounding hills interfering with the sunshine. They have hitherto had few winter residents, and it seems unjustifiable to recommend them when there are several resorts equally accessible and in all respects superior.

St. Moritz enjoys a very charming situation. It is 6089 feet above the level of the sea (nearly 1000 feet higher than Davos), and the village rests on the crest of a hill 300 feet above the level of the Inn valley. Beneath lies a lake, on the edge of which are the baths of St. Moritz (St. Moritz Bad), with numerous splendid hotels, while beyond stretches a range of snowy peaks of great grandeur. The baths have their season in August and September, when St. Moritz is the favourite resort of wealth and fashion, but are closed in winter. Several hotels in the village proper now remain open throughout the year for the benefit of winter visitants, and the accommodation provided is in every way excellent. Good medical attendance can be procured.

A few miles beyond St. Moritz, on the margin of the lake of Sils, is the Grand Kursaal de la Maloja, a magnificent hotel (perhaps the finest in Europe), recently erected. All that money and art can do has been done both to provide for the comfort and to promote the pleasure of winter residents. The scenery in the neighbourhood, though somewhat inferior to St. Moritz, is nevertheless very fine, and a view of the lake with its grand encircling peaks, when the moon rides high and the snow is on the ground, is a scene one cannot easily forget. It must not be forgotten, however, that this fine winter sanatorium is in one of the most secluded positions in Europe. The railway does not approach nearer than Coire on the north, and Chiavenna on the south. There is no village in the vicinity of the hotel, and no opportunity for any social pleasures beyond those afforded by the visitors themselves.

What are the climatic peculiarities of the Inn valley, and wherein do they differ meteorologically and in their application to disease from those prevailing in the valley of Davos? St. Moritz and the Maloja are both at a materially higher elevation than Davos; hence they have a lower mean temperature, a longer winter, and a greater duration of frost and snow. Nevertheless, owing to peculiarities of local position, they both enjoy somewhat more sunshine during the winter than Davos, and in this respect the Maloja takes precedence of St. Moritz; but there is one essential point in which, according to the unanimous report of invalids and permanent residents, Davos enjoys an undisputed pre-eminence—namely, stillness of the atmo-

sphere. That the Alpine winter climate would be utterly unsuitable to the invalid did not the profound atmospheric calm permit the full influence of the solar heat to be felt while the shade temperature is far below freezing-point is a cardinal and indisputable principle in all theories regarding the efficacy of the high altitude treatment. This point is really the pivot on which the whole question turns. Hence windiness is simply a fatal objection to any *luftkurort*. It would be inaccurate, however, to describe the winter climate of St. Moritz and the Maloja as windy. Perfect days—days of absolute stillness, spotless skies, and uninterrupted sunshine—are by no means rare during winter in the Inn valley, but they are unquestionably less frequent than at Davos. That this must necessarily be so is evident to the eye of any observer who is familiar with the principles which regulate the relation of topography to climate. Just as the waters of the Inn rush down the long funnel-shaped valley of the Engadine, so must there also at times be a descent of atmospheric currents. As the writer drove up from Süs to Samaden on a brilliant day in October, the whistling of the wind reminded him, in spite of the bright sunshine, that he had left behind the atmospheric placidity of Davos. The position of the Maloja hotel, situated almost at the apex of the long double valley formed on one side by the Engadine and on the other by the Maloja Pass and the Via Bregaglia, seems particularly obnoxious to the charge of windiness. The climate of the higher Alps is one of great stimulation and much tonic influence, and these characteristics will be exaggerated in proportion to the amount of wind. But in those cases in which the climate fails to confer benefit, the usual explanation is that it is too stimulating; hence the calm of Davos is all in its favour. At Davos one meets with numerous cases of patients who have crossed over into the Engadine, often for the mere purpose of varying the monotony of existence, but who have been driven back by the over-stimulation of the climate. On the other hand, the results of treatment at St. Moritz and the Maloja have frequently been excellent, but there cannot be a doubt that extreme care is necessary in the selection of cases. Debilitated patients, patients with nervous irritability or the least suspicion of circulatory weakness, should on no account be sent to the Engadine. If Davos and Wiesen are of doubtful applicability to such cases, St. Moritz and the Maloja are absolutely contra-indicated.

The high altitude treatment of phthisis has fought its way into favour against heavy prejudices, and has at least established its claim to careful consideration. It is not a specific, as the rapidly-filling graveyard of Davos abundantly proves, but in properly selected cases its results probably excel those obtained by the older methods. It is to assist the profession in the choice of suitable cases, and to save a hopeful advance in therapeutics from the odium which follows from its improper application, that the present series of articles has been written.

MEDICAL SOCIETY OF LONDON.

GREAT was the success of the Medical Society's Dinner held in the Venetian Chamber of the Holborn Restaurant on Tuesday, Mr. Brudenell Carter, the retiring president, being in the chair. After the loyal toasts had been duly honoured, the toast of "The Army" was responded to by Sir Thomas Crawford, who referred to the question of the "relative rank" of medical officers. His observations entirely supported the position which we took on this question (see THE LANCET, page 482). There was nothing in the Royal Warrant that trenched in any way on the prerogative of the Medical Department of the Army. We have no doubt that the strong assurance of the Director-General of the Army Medical Department will quiet the unnecessary alarm that has been excited. Captain Crozier replied for the Navy, and Colonel Edis for the Volunteer forces. To Mr. T. Bryant was entrusted the toast of "The Houses of Parliament," and this was answered by Colonel Duncan, M.P. Dr. Ord proposed "The Medical Corporations," and Mr. Shillitoe, the Master of the Society of Apothecaries, responded. Sir Joseph Fayrer did the honours of the toast for "The Retiring President." Dr. Hughlings Jackson was warmly received as the new President of the Society. The remarks of Mr. J. H. Morgan, the retiring secretary, Dr. Samuel West the senior secretary, Mr. Bernard Pitts, the new secretary, and Mr. Poole, the much-respected registrar, were received with acclamation. We were greatly pleased with the suggestion of Dr. Samuel West that the clinical meetings of the Society should become a still more prominent feature—a suggestion that we have advocated for some time past as likely to prove of great practical value and interest, and certainly conducive to the welfare of the Association.

THE MANCHESTER MEDICO-ETHICAL ASSOCIATION AND CORONERS' INQUESTS.

AT an ordinary meeting of the Manchester Medico-Ethical Association, held on April 24th, 1885, Dr. Sinclair read a paper upon "Coroners' Inquests." This paper led to the appointment of a sub-committee of the Association for the purpose of obtaining and considering evidence as to the present inefficient working of the Coroner's Court. The sub-committee, with Dr. Sinclair for their chairman and Dr. Owen as secretary, commenced their labours on Sept. 15th, 1885, and held fourteen sittings. Evidence was obtained of the inefficiency of the present system from (1) the personal experience of each member of the sub-committee; (2) from published statements which have appeared from time to time in the medical journals and public papers; (3) from statements received in reply to a circular letter asking for information based upon personal experience. In all 300 letters were addressed to various medical men, including members of the Association, medical officers of health, police surgeons, professed medical jurists, and public analysts. The evidence thus obtained was considered under the following heads: (1) The coroner, his functions, qualifications, and mode of election; (2) the position of medical men as skilled witnesses; (3) the present system of registration of deaths; (4) the coroner's jury. The third branch was found to be inseparable from the inquiry, as much of the inefficiency complained of was found to be due to a faulty system of death registration. After giving a number of cases illustrative of the defects of the present system so far as the coroner is concerned, the sub-committee expressed their opinion: 1. That the qualification and position of a coroner should be those of a stipendiary judge, who should devote the whole of his time to the duties of his office, and that his salary should in no case be dependent upon the number of inquests. 2. That the present mode of election to the office is unsatisfactory, and that the election should invariably rest with the Crown. 3. That the functions of a coroner should be to conduct public inquiries into the cause of death in certain cases by means of the evidence of experts and of other witnesses, and to sum up such evidence in its legal aspects before a properly constituted jury. 4. That he should have no discretion, but to hold an inquest in every case of death, sudden or otherwise, in which the cause of death cannot be certified by a legally qualified medical man. But it is not implied that the coroner should be necessarily debarred from holding an inquiry, provided there exists reasonable grounds for suspicion, because a death has been certified by a legally qualified practitioner. 5. That no inquest shall be held without a previous examination of the body by a properly qualified medical man. After giving details showing the unsatisfactory way in which necropsies are too often made and medical evidence given, the sub-committee made the following suggestions:—1. The examination of the body upon which an inquest is to be held should be made by a medical man specially skilled in such matters, who should be designated the Public Pathologist, and that for every coroner's district there should be one or more such pathologists appointed to conduct the examination of the body previously to the inquest. 2. The appointment of the public pathologist should be made by the same authority as in the case of the coroner. 3. The pathologist should, in cases in which he may deem it necessary, suggest to the coroner the advisability of calling in the aid of other scientific experts (for analysis, &c.). 4. The duties of the public pathologist should not preclude the medical attendant in the case from giving evidence as a skilled witness when necessary. 5. For every coroner's district one or more mortuaries, with proper appliances, should be provided, which would be available for post-mortem examinations in the absence of proper accommodation elsewhere, or in such other circumstances as the coroner might think would

warrant the removal of the body; and that the removal of the body to a mortuary should be compulsory under the coroner's order. The report concludes with further suggestions, among them being that registrars of births and deaths should be required to report to the coroner every uncertified death, that the period of medical attendance should be stated in each death certificate, that all still-births should be registered, that the status of coroners' jurors should be improved, and that the present custom of viewing the body is objectionable and unnecessary.

We hope at an early date to take into consideration the views of the sub-committee, which are of a somewhat sweeping character.

SCIENTIFIC RESEARCH.

THE following memorial, signed by medical and surgical teachers of all the London medical schools, has just been presented to the Council of the Royal College of Surgeons:—

To the Council of the Royal College of Surgeons of England.

MR. PRESIDENT AND GENTLEMEN,—We venture to bring to your notice the anxiety that is felt by those who are directly concerned in the teaching of surgery in London with reference to the proposed extension of the buildings in Lincoln's-inn-fields, inasmuch as the present moment offers a unique opportunity for the establishment and endowment of an institute for the advancement of surgery by research.

The progress of surgery largely depends upon the facts obtained by research in the following branches of science: 1. Morbid anatomy, including histology. 2. Experimental pathology, including bacteriology. 3. Experimental operative surgery. The present Museum, which offers a splendid field of study, can never be considered a complete memorial of Hunter's work, and can never be thoroughly utilised for the benefit of surgical science until a laboratory is added to it for the pursuit of the objects above indicated. In view of the increased power and wealth of the Royal College of Surgeons of England, we hold that any Fellow or Member who is competent to carry out scientific investigations should be able to do so without inconvenience and without expense. Within the walls of our own College fresh knowledge would thus be gained, new methods of surgical treatment would be brought to light, and British surgury would no longer be compelled to lean upon the information derived from foreign laboratories for the solution of the many problems which surround its progress. We therefore earnestly hope that in the contemplated enlargement of the College adequate provision will be made for the study of these most important branches of our art.

(Here follow the signatures.)

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Bilston Urban District.—Bilston is one of the urban districts in which some cases of typhus occurred last year, but at the end of December no further cause for apprehending an outbreak of this disease remained. Bilston is, however, a district needing much improvement as regards the lodgment of the people, and this especially as to the vicious practice which formerly obtained of building so-called back-to-back houses. We hope the present bye-laws of the town require every house to have its own appointed open space to the rear. Child mortality causes Dr. T. R. Bailey some anxiety. The rate under one year of age exceeds 180 per 1000 of the children born, but he very much fears that it is largely due to conditions of trade and parental mismanagement, which it will be difficult to overcome. There is, however, room for progress in many matters affecting child life, notably as to the through-ventilation of dwellings and improved means of excrement and refuse disposal. As regards the latter, a change may be hoped for, since the authority are considering an alternative method suggested by Dr. Barry of the Local Government Board.

Ashton-in-Makerfield Urban District.—The general death-rate of this district for 1886 was 17·1 per 1000. The births were 475 in number, and the deaths under one year of age were 64; this gives a rate of 13·5 per cent., which can hardly be regarded as very excessive, but Mr. Hannah evidently thinks it might be further substantially reduced. Especially should the diarrhœa mortality be lessened, due as it largely is, in his opinion, to improper feeding, including the excessive dilution of milk. The general account of nuisances dealt with points to a satisfactory performance of the current duties by the sanitary officers.

Newton-Abbott Combined District.—Mr. Harvey gives the birth- and death-rates of the Newton-Abbott rural district for 1886 as 29·1 and 16·5 per 1000 respectively. In Broadhempstone there were in the early part of the year twelve cases of diphtheria, of which five were fatal. The disease was imported into the local school by children who, for geographical reasons, were allowed to attend the Broadhempstone school, instead of their own in an adjoining district. This circumstance leads Mr. Harvey, as it has led others, to point to the difficulties attending the procuring of information as to outbreaks involving sanitary frontiers. Both this outbreak and a subsequent occurrence of diphtheria led to the discovery, and as far as possible to the remedy, of conditions of filth and of dampness of sites with which the disease was associated. At Kingsteignton the water question was discussed during the year, and Mr. Harvey's description of the sources of contamination in the village, as also of the millions of gallons running through the place continually, convinced the inhabitants of the desirability of securing a proper supply. The first scheme unfortunately broke through, owing to difficulties as to mill-owners' compensation; and now another scheme for securing a spring at Tor Hill is under consideration. At Bishopsteignton a new water-service has been completed, at Bovey new sewers have been laid, at Ashburton new water-works have been commenced, and at Pottery near Bovey and at Fairwater improvements in water-supply have been effected. Indeed, this district has made sanitary progress of a sort which is calculated to improve it very materially, and to give confidence to those who seek a healthy residential neighbourhood. In the *Wolborough* urban district the death-rate was 15·28 per 1000, and the record of work given shows that no opportunity is lost to ensure further improvement in its sanitary circumstances. At *Dawlish* the death-rate was 17·6 per 1000, after making the necessary correction for visitors. Measles and scarlatina prevailed in the last quarter of the year, no epidemic disease having previously existed in the place since 1880. By rigidly excluding children living in infected houses from attending the schools, and by means of other precautions, the diseases appear to have come to an end. During 1886 they each caused three deaths. A difficulty in enforcing a strict bye-law as to the distance of piggeries from houses in the more rural parts of a nominally urban district has arisen in Dawlish. The same has occurred elsewhere, and we believe the Local Government Board now assent either to the division of the district for the purposes of such a bye-law, or else they make the distance clause apply, not to each house separately, but to any two or more houses. The sewerage scheme for Dawlish has again been delayed, and it has been found necessary to prepare new designs by which the sewage may be delivered to the eastward and below low water-mark.

Carlisle Urban District.—Crozier Lodge, the sanitary hospital for this and the rural district, has again served an excellent purpose. The immediate isolation of small-pox in the rural district is held by Mr. William Brown, F.R.C.S., to have saved the spread of infection into the city. Typhus was in a similar way isolated and checked. Carlisle has long been comparatively free from scarlet fever, but there is now an ominous increase of attacks, and seven deaths occurred in 1886. Typhoid fever mortality, though decidedly below the average, showed an increase in 1885, but the causes are carefully ascertained, and, we may assume, also remedied. Diarrhœa was exceptionally fatal in October, 1886, it being associated with an abnormally high temperature for that month. Some important sanitary works were executed during the past year. Extra-mural abattoirs were commenced, the filter-beds of the Carlisle Waterworks were extended, and a portion of the ward accommodation at Crozier Lodge was remodelled and reconstructed. The general mortality for 1886 was at the rate of 19·4 per 1000.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns 5792 births and 3776 deaths were registered during the week ending March 5th. The annual death-rate in these towns, which had been equal to 19·5, 21·1, and 21·3 per 1000 in the preceding three weeks, was again 21·3 last week. During the first nine weeks of the current quarter the death-rate in these towns averaged 21·9 per 1000, and was 2·3 below the mean rate in the corresponding periods of the ten years 1877-86. The lowest rates in these towns last week were 11·6 in Bolton, 14·1 in Brighton, 15·3 in Sunderland, and 17·1 in Birkenhead. The rates in the other towns ranged upwards to 26·5 in Wolverhampton, 26·7 in Huddersfield, 28·1 in Blackburn, and 31·2 in Manchester. The deaths referred to the principal zymotic diseases in the twenty-eight towns, which had been 340, 371, and 372 in the preceding three weeks, further rose last week to 385; they included 152 from measles, 93 from whooping-cough, 41 from scarlet fever, 34 from diarrhœa, 31 from "fever" (principally enteric), 31 from diphtheria, and 3 from small-pox. These zymotic diseases caused the lowest death-rates during the week in Bolton, Halifax, and Bradford, and the highest rates in Oldham, Manchester, and Huddersfield. The greatest mortality from measles occurred in Liverpool, Salford, Manchester, and Huddersfield; from whooping-cough in Birmingham, Oldham, Preston, and Plymouth; from scarlet fever in Manchester, Salford, and Birkenhead; and from "fever" in Blackburn. The 31 deaths from diphtheria in the twenty-eight towns included 19 in London, 2 in Bristol, and 2 in Birmingham. Small-pox caused 3 deaths in Manchester, but not one in London and its outer ring, or in any of the twenty-six other large provincial towns. Only 6 cases of small-pox were under treatment on Saturday last in the metropolitan hospitals receiving cases of this disease. The deaths referred to diseases of the respiratory organs in London, which had increased in the preceding four weeks from 364 to 466, were last week 459, and were 28 below the corrected average. The causes of 72, or 1·9 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Newcastle-upon-Tyne, Nottingham, Leicester, Portsmouth, and in six other smaller towns. The largest proportions of uncertified deaths were registered in Salford, Oldham, Halifax, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 24·3 and 22·5 per 1000 in the preceding two weeks, rose again to 23·6 in the week ending March 5th; this rate exceeded by 2·3 the mean rate during the same period in the twenty-eight large English towns. The rates in the Scotch towns last week ranged from 17·4 in Dundee and 18·7 in Leith, to 25·6 in Glasgow and 32·4 in Aberdeen. The 589 deaths in the eight towns last week showed an increase of 27 upon the number in the preceding week, and included 32 which were referred to whooping-cough, 27 to measles, 19 to scarlet fever, 11 to diarrhœa, 5 to diphtheria, 4 to "fever" (typhus, enteric, or simple), and not one to small-pox; in all, 98 deaths resulted from these principal zymotic diseases, against 103 and 99 in the previous two weeks. These 98 deaths were equal to an annual rate of 3·9 per 1000, which exceeded by 1·7 the mean rate from the same diseases in the twenty-eight English towns. The fatal cases of whooping-cough, which had increased in the preceding five weeks from 19 to 33, rose last week to 32, of which 18 occurred in Glasgow, 5 in Edinburgh, and 5 in Aberdeen. The 27 deaths from measles showed a decline of 3 from the number in the previous week, and included 19 in Aberdeen and 8 in Glasgow. The fatal cases of scarlet fever, which had been 13, 25, and 17 in the previous three weeks, rose again last week to 19, of which 13 occurred in Edinburgh and 4 in Glasgow. The 11 deaths attributed to diarrhœa corresponded with the number in the previous week, and included 5 in Glasgow and 3 in Dundee. Of the 5 deaths from diphtheria, 2 occurred in Glasgow and 2 in Edinburgh; and the 4 deaths referred to "fever" included 2 in Glasgow. The deaths referred to acute diseases of the respiratory organs in the eight towns, which had been 146 and 121 in the preceding two weeks, rose again last week to 142, but were 38 below the number returned in the corresponding week of last year. The causes of 76, or nearly 13 per cent., of the deaths registered during the week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been 35·3 and 30·7 per 1000 in the preceding two weeks, further declined to 28·1 in the week ending March 5th. During the first nine weeks of the current quarter the death-rate in the city averaged 31·0, the mean rate during the same period being but 20·8 in London and 21·7 in Edinburgh. The 190 deaths in Dublin last week showed a further decline of 18 from the numbers in the previous two weeks; they included 7 which were referred to scarlet fever, 5 to "fever" (typhus, enteric, or simple), 1 to measles, 1 to whooping-cough, and 1 to diarrhœa. Thus the deaths from these principal zymotic diseases, which had been 14 in each of the preceding two weeks, were last week 15; they were equal to an annual rate of 2·2 per 1000, the rates from the same diseases being 1·6 in London and 4·2 in Edinburgh. The deaths from scarlet fever, which had been but 3 and 2 in the previous two weeks, rose last week to 7; the 5 fatal cases of "fever," on the other hand, showed a decline of 3 from the number in the previous week. The deaths of infants showed an increase of 3, and those of elderly persons a decline of 2, compared with the numbers in the previous week. Four inquest cases and only one death from violence were registered; and 40, or nearly a quarter, of the deaths occurred in public institutions. The causes of 29, or more than 15 per cent., of the deaths registered during the week were not certified.

THE SERVICES.

A SPECIAL COMMITTEE, composed of Sir Archibald Alison (who is to preside), Sir Evelyn Wood, Mr. G. Lawson, Sir Thomas Crawford, and Colonel Methuen, has been appointed to consider the full organisation of the medical department for an army corps in the field, as well as the number of horses and servants required for medical officers on active service.

WAR OFFICE.—Army Medical Staff: The date from which Surgeon-Major S. Moore, M.B., is granted retired pay, with the honorary rank of Brigade Surgeon, is Jan. 22nd, 1887, and not, as stated in the *Gazette*, February 11th, 1887. The undermentioned Surgeons on probation to be Surgeons:—F. J. Morgan; W. H. Horrocks, M.B.; C. H. Hale; H. C. Thurston; B. H. Scott; W. C. Poole, M.B.; O. R. A. Julian; G. Raymond, M.B.; E. A. Burnside; T. McCulloch, M.B.; A. B. Hinde; A. Y. Reily, M.B.; J. W. Cockerill; J. Ritchie, M.B.; H. St. G. S. Hore; S. Macdonald, M.B.; E. Corcoran; A. O. C. Watson, M.B.; E. W. Gray, M.B.; D. Stiell, M.B.; L. E. A. Salmon; G. A. Wade, M.B.; J. Minniece, M.D.; R. H. Penton; M. P. C. Holt; W. L. Gray, M.B.; E. G. Browne; J. C. Morgan; H. I. Pocock; G. Hilliard, M.B.; C. R. Elliott, M.D.; C. A. Young; J. W. Bullen, M.D.; J. C. Weir, M.B.; B. J. Innis; R. C. Thacker; W. N. Murphy, M.D.; S. F. Clark, M.B.; and E. M. Hassard.

ADMIRALTY.—The following appointments have been made:—Surgeon John Lownes, to the *Landrail*, to date from the 10th inst.; Staff-Surgeon J. Lyon, to the *Ajax*; Surgeon G. A. Spiller, to the *Duke of Wellington*, additional, for disposal; Surgeon W. C. Spiller, to the *Ganges*, additional, for disposal; Surgeon W. Belt, to the *St. Vincent*, additional, for disposal; Surgeon H. W. Rickards, to the *Boscawen*, additional, for disposal; Surgeon F. W. Brice, to the *Britannia*, additional, for disposal; Surgeon J. W. Slaughter, to the *Cambridge*, additional, for disposal; Surgeon J. B. Clibborn, to the Lisbon Hospital, to date from 11th inst.; Surgeon S. D. O'Grady, to the *Indus*; and Surgeon C. J. Mansfield, to the *Griffon*, to date from 16th inst.

The following qualified candidates for the Naval Medical Service have been appointed to be Surgeons in Her Majesty's Fleet:—John Douglas Hughes; William John Colborne; John Hutton Stenhouse, M.B.; Joseph Agnew Moon; Robert Hardie, M.B.; Cornelius Bradley, M.D.; George Trevor Collingwood; Richard Miller, M.B.; George Fletcher Collins; Charles Dickinson; John Edwin Coad, M.B.; Hubert Holyoake; George Wilson, M.B.; James Moore; Edwin Griffin, M.D.; John Duncan Menzies, M.B.; Hugh St. David Griffiths; and Walter Bowden.

In accordance with the provisions of Her Majesty's Order

in Council of April 1st, 1881, Fleet-Surgeon Robert Nelson has been placed on the Retired List of his rank.

RIFLE VOLUNTEERS.—5th Durham: Andrew Arthur Abraham, Gent., to be Acting Surgeon.—2nd Volunteer Battalion, the Gloucestershire Regiment: Surgeon Thomas Partridge is granted the honorary rank of Surgeon-Major.—1st Volunteer Battalion, the Lancashire Fusiliers: Surgeon J. E. Lees, M.B., resigns his commission.—3rd Volunteer Battalion, the Northumberland Fusiliers: Surgeon Anthony Bell is granted the honorary rank of Surgeon-Major.

Correspondence.

"Audi alteram partem."

THE TREATMENT OF PLACENTA PRÆVIA.

To the Editors of THE LANCET.

SIRS,—An *ex cathedrâ* statement in THE LANCET on the treatment of placenta prævia carries such weight with the profession, both at home and abroad, that I am anxious to be permitted to point out that, so far, it is only in Germany that such exceptionally good results have been obtained by the method of Braxton Hicks (bipolar version), which is the treatment recommended so forcibly in its columns of to-day. Lomer, on page 1235 of the *American Journal of Obstetrics for* 1884, gives the following table—

	Cases.	Mothers died.	Children died.
Hofmeier ...	37	1	23
Behm	40	0	31
Lomer	101	7	51
	178	8	105

It follows, then, that since these three obstetricians must have treated fifty-eight cases without a death, unless the number 236 mentioned in THE LANCET is a misprint; and, as fifty-eight is also the number of cases which Behm is reported to have treated without a death, the coincidence is so remarkable as to suggest the possibility of an error in the number. In this country and in America the method of Barnes (partial separation of the placenta and cervical dilatation with hydrostatic bags) has given such very good results that the time has not yet arrived to definitely settle which is the best mode of treatment, though to my mind either is incomparably better than any other method hitherto suggested. And to show that some of our continental brethren appreciate our work, I would refer your readers to the "Thèse d'Agrégation" (accouchements) for 1886, entitled "De la Conduite à tenir dans les Cas de Placenta Prævia," by Dr. A. Auvard,[1] who, in addition to Budin (now happily restored to health by the skill of our countryman, Lawson Tait), promises to worthily uphold the high prestige of the French obstetrical school. In this work the author discusses several methods of treatment, but places the two English methods in the first rank, and enters fully into their respective merits, arriving at the conclusion that both "sont donc également bonnes" (page 145); and on page 72 he is kind enough to say, "Les résultats obtenus par Murphy à l'aide de la méthode de Barnes sont excellents"; and on page 144 that in my hands this method "est celle qui s'offre avec les chiffres les plus brillants."

I have now treated twenty-eight cases of placenta prævia without a single death, twenty-three of which are recorded in the *Medical Press and Circular* for 1885, pages 179-205; and as I have obtained such good results from the method of Barnes I naturally prefer it, more especially as the hydrostatic bags are required for what I would wish to enunciate as a ninth great proposition—"that premature labour should be brought on as soon as we know that we are dealing with a case in which the placenta presents after the seventh month of pregnancy, and even before then should the bleedings be serious, frequent, or continuous." This rule I have urged as strongly as I could in the paper referred to, I have always acted on it, and it is only by continuing to do so that I can hope to keep my mortality at *nil*, or even at a small percentage. For what can a man do when called to a case already *in articulo mortis*? And it should be constantly borne in mind that hæmorrhage may occur at any time during pregnancy, and that it must occur when labour sets in; and we cannot foresee when it will take place or in what quantity it will pour out; and it may be, and often is, so sudden and so copious that death occurs before assistance can be obtained; or that the patient is so exhausted that assistance, when it comes, is powerless to save life. And I would impress upon your readers that the horrible mortality of placenta prævia is not due to the impotence of our art, but to violent hæmorrhage occurring before assistance can be obtained, or where that assistance is of a helpless, do-nothing character. Whereas, if we take warning from the preliminary bleedings (which often are slight at first), we can generally have time to fix a convenient opportunity to be present during the whole period of labour, ready for every emergency, and, thanks to Barnes's bags (or Steele's, as I prefer), we can fix the time for inducing labour as easily as for doing an abdominal section; and labour can be surely and safely brought on and completed, as I have demonstrated over and over again, in some cases even in a shorter period than it takes for a complicated ovariotomy. Another great advantage this method possesses is, that it enables practitioners who have no particular *penchant* for obstetrical operations to secure the help of an obstetrician with practical experience of placenta prævia to aid them, and to share the responsibility in this the most terrible complication of labour.

I am, Sirs, yours obediently,

Sunderland, March 5th, 1887. JAMES MURPHY.

[1] Octaine Doin, 8, Place de l'Odéon, Paris.

THE NATURE OF COMA.

To the Editors of THE LANCET.

SIRS,—I have been much interested by the leading article on Coma in your last issue. You quote Dr. Hughlings Jackson, that "the breathing fails before the heart, and the accessory parts of the breathing fail before the fundamental. It consists in a long process of degradation, the last point of attack being the heart, and the penultimate the breathing." I have recently had a case where, on the night preceding death, the pulse frequently disappeared, while the breathing was loud and stertorous. Soon after 8.30 A.M. it stopped altogether, and the heart's action could not be detected, but this may have been due to the presence of loud râles in the lungs. The breathing continued noisy, and at the rate of 23 to the minute, till it gradually fell to 17, and then ceased at 2.30 P.M. During the whole time, frequent examinations were made to see if the heart's action could be observed, but without success. I conclude from your article that it must, however, have continued working all this time. The patient was seen in consultation during the "precomatose period" by Dr. Broadbent, Mr. Walter Coulson, and Dr. Russell Reynolds.

I am, Sirs, yours truly,

J. B. EMMERSON, M.D. Durham.

High-street, Biggleswade, March 7th, 1887.

NORTHERN COUNTIES NOTES.

(From our own Correspondent.)

NEWCASTLE INFIRMARY: ADOPTION OF THE FREE HOSPITAL SCHEME.

AT a special meeting of the governors of the Newcastle Infirmary, it was decided, in deference to the house committee and medical board, to adopt their report, and make the infirmary a free hospital, subject to a reservation of existing rights of life governors and to the receipt of periodical contributions from the workmen of Tyneside. It was shown by the report that the average cost to the infirmary of each in-patient had been £4 5*s.* 6*d.*, or £2 3*s.* 6*d.* more than paid for each letter of admission. With regard to the recommendation to discontinue the admission of children, the committee thought it was premature to commit themselves to its adoption. The committee did not adopt the recommendation to admit paying patients, but steps were to be taken to see that each in-patient, when able, contributed in whole or part to the expense of their maintenance. They recommended that the casual department be remodelled and the out-patient department be confined to such cases as had

already received treatment in the wards; also, that the rule excluding male venereal cases from the hospital be strictly enforced. As regards the suggested fee to be paid by medical students, this proposal has been considerably modified. As now fixed, the fee to be paid by all students at the infirmary will be six guineas perpetual, and for one year two guineas. The original proposition was £5 5s. per annum. With regard to the election of the honorary staff, in the future the mode of election is to be altered so as to avoid the expense of canvassing, and for this purpose a committee of selection is to be formed, taking care that it is sufficiently numerous and of a representative character. When this important report was put to the meeting it was quietly and unanimously carried; and so the week has seen a great organic change in our infirmary, by which I predict it will be ultimately benefited, although at first some interests may suffer, and the sudden change will no doubt give rise to some confusion in the house, which will, however, soon adjust itself to its altered constitution.

Newcastle-on-Tyne, March 7th.

EDINBURGH.

(From our own Correspondent.)

PROFESSOR RUTHERFORD'S RETIREMENT.

DR. WILLIAM RUTHERFORD, Professor of Physiology in the University, has retired from his chair on leave of absence. The plea upon which his absence is permitted from the duties of his department is, as stated in the local papers, one of ill-health, produced by overstrain and worry. It is known to the public that the unfortunate matter connected with his misunderstanding with his late senior assistant is now receiving the attention of the University Court, as suggested in a recent issue of THE LANCET. The arrangements for carrying on the work of the summer session are not yet finally settled, but at the approaching professional examinations Dr. Caton of Liverpool has been appointed to take Professor Rutherford's place.

UNIVERSITY BUILDING FUND.

The Chancellor of the Exchequer has met the wishes of the University authorities in respect to the Government grant towards the cost of the site for the completion of the medical buildings. The sum of £8000 is to be granted by Government, and the remaining amount (£4000) necessary to effect the purchase is contributed by the munificent donor, who has already presented the funds for the building itself. The last difficulty in the way is thus removed, and the work will at once proceed.

MEDICO-CHIRURGICAL SOCIETY.

An animated discussion upon the diagnosis and treatment of cerebral abscess occupied the whole of the last meeting of the Society. The subject was introduced by Dr. M'Bride and Mr. A. G. Miller in a joint paper upon those cases of abscess which follow ear disease. Dr. M'Bride's part of the paper was a complete and exhaustive exposition of the whole subject, containing many new observations of great practical importance. Among these are his views upon the value of the tuning-fork as an aid to the localisation of the abscess. If the vibrations be perceived by the injured ear on contact of the tuning-fork with the cranial bones, it indicates that the internal ear is intact, that the middle ear is the part affected, and that the abscess is situated above the tentorium. Should the vibrations not be perceptible, the internal ear is affected, in which case the matter is usually below the tentorium, in the cerebellum. His differentiation of cerebral abscess from purulent meningitis and from phlebitis of the lateral sinus was another point of great importance. The operation proposed in such cases by Dr. M'Bride, and carried out by Mr. Miller, is to cut down as near as possible to the source from which the pus has sprung—i.e., by the nearest route to expose the roof of the tympanum. This is done by reflecting the pinna downwards, opening the skull by means of a chisel at a point a quarter of an inch above the osseous meatus, at which point the bone is exceptionally thin and can be perforated with great ease. This incision opens into the cranium exactly at the floor of the middle fossa. The dura mater is then raised from the petrous portion for a third of an inch towards the middle line, and the roof of the tympanum thus exposed, any abscess in connexion with it being opened; or, if contiguous but not continuous, the abscess may be evacuated by incising the dura mater and a portion of the brain substance. Mr. Miller read the notes of the cases operated on, and made some remarks on the surgical aspects of the subject. He spoke of the importance of differentiating cerebral abscess from purulent meningitis, the temperature being taken as the most crucial symptom in doing so: in the former, he thought an operation was indicated; in the latter, experience showed it to be of little avail. Professor Greenfield and Professor Annandale spoke on the subject: the former referring to his recent case, in which Mr. Caird had evacuated an abscess in the temporo-sphenoidal lobe, with a satisfactory result; the latter discussing the plea for operative interference in such cases, in cerebellar abscess, and in cognate conditions in the skull. Dr. Byrom Bramwell contributed some important factors to the discussion by his clear statement of the grounds on which a diagnosis of cerebral abscess can be clearly established. Mr. Caird discussed the best site for operation in such cases. Prof. Chiene and Dr. Hughes Bennett also spoke, the latter referring to the success of trephining, with removal of a portion of skull and membranes, in cases of ordinary epilepsy.

Edinburgh, March 8th.

DUBLIN.

(From our own Correspondent.)

ROYAL COLLEGE OF SURGEONS.

BY a majority of 12 to 3 the Council of the Royal College of Surgeons have passed a resolution in which the views of the College of Physicians were invited on the subject of the admission of the Apothecaries' Hall into the proposed conjoint scheme between the two Colleges. The Council declare that two alternatives seem to be open—namely, a combination between the three bodies, or a combination between the Colleges of Surgeons and Physicians on the one hand, and the College of Surgeons and the Apothecaries' Hall on the other. This latter is the dual scheme proposed by Sir Charles Cameron, but the Council prefer the former arrangement. The College of Physicians have had this resolution before them, and have again, by a nearly unanimous vote—I believe the numbers were 19 to 2—declared against the tripartite scheme. I have reason, however, to believe that many of the Fellows of the College of Physicians are not adverse to the proposal to allow the College of Surgeons to be allied with the College of Physicians, and also to form a combination with the Apothecaries' Hall. It is felt by the great majority of the profession in Dublin that almost any scheme would be preferable to that which would allow the Apothecaries' Hall to be a complete licensing body. The interests of the students should also be considered, and until some definite scheme becomes adopted their position is a very anxious one, not knowing for certain what subjects they will be examined in, or what regulations they must obey so as to qualify themselves for examination.

DIPLOMA IN PUBLIC HEALTH.

As mentioned in last week's issue, the Council of the Royal College of Surgeons have agreed upon a scheme for the institution of a diploma in public health, and have submitted the same to the General Medical Council for approval. The examination will extend over three days, and will include the usual hygienic subjects. The fee has been fixed at seven guineas, to both those who hold diplomas of the College and those who do not. It is expected that many army surgeons will apply for the diploma, and it is understood that the examination will be of such a nature as to raise the character of the diploma as high as possible.

RARE FORM OF DOUBLE VAGINA.

At a meeting of the Obstetrical Section of the Academy of Medicine in Ireland last week, Dr. William Fraser described an example of a double vagina which had come under his observation in a lady patient. The septum was only about an inch and a half in length, thus differing from the ordinary cases of double vagina.

LIMERICK DISTRICT LUNATIC ASYLUM.

The Limerick Town Council recently refused to pass a presentment with regard to the maintenance of this

institution, on the ground that they were not properly represented on the board of governors. Last week, however, at the Limerick Spring Assizes, before Mr. Justice O'Brien, an application was made for the amount required, and without hesitation his lordship fiated the presentment.

Charles Hudson, F.R.C.S.I., died on the 3rd inst., at Glenville, county Cork, aged eighty-five years.

Dublin, March 8th.

BELFAST.

(From our own Correspondent.)

THE ROYAL HOSPITAL.

FROM the report presented at the quarterly meeting on March 1st, we gather that there have been during the past three months 594 in- and 2652 out-patients. The financial condition of the hospital is now very satisfactory. At the close of the last quarterly report the debt due by the hospital was £1542 3*s*. Through the kindness of friends, a number of large contributions have been made, and the debt is now wiped out. Further, a bequest amounting to £3015 12*s*. 6*d*. has also been received, and the sum of £3000 has been invested on behalf of the hospital. There has been a slight falling off in receipts, but an active and extensive canvass for new and enlarged contributions is now being prosecuted by a number of influential citizens of the town, and by this means the Board hope that a much-needed and solid addition to the permanent income of the hospital will be realised. One of the most active and respected members of the Board of Management made a strong appeal to those present to associate the Queen's Jubilee with the establishment of a consumption hospital in Belfast, where it is said more than 700 persons die annually of phthisis. A movement in this direction has already been made by Mr. Foster Green, as announced in your issue of last week. In addition, other friends have promised contributions sufficient to bring the amount up to £5000. It is hoped the remaining sum will soon be forthcoming.

THE BELFAST HOSPITAL FOR SICK CHILDREN.

At a numerously attended meeting of the friends of this institution the following resolution was unanimously passed: "That the committee and friends of the Belfast Hospital for Sick Children have for many years past felt the necessity of having a convalescent home in connexion with it, and they believe no more desirable object could be selected to form a memorial of the Queen's Jubilee." Further, the meeting pledged itself to endeavour to have a cottage convalescent home founded this year, with the hope of its future extension. The building of such a convalescent home would render the Children's Hospital complete in every respect.

BIRTH OF TRIPLETS.

The Royal Bounty (£3) has been forwarded to a poor woman in Belfast, who was recently delivered of three daughters, all of whom are living. On Saturday night last, another poor woman in the Belfast Union Infirmary gave birth to one boy and two girls, all of whom are alive.

Belfast, March 8th.

THE SEWERS OF MONACO.

(From our Special Correspondent.)

IN no part of the Riviera are greater cleanliness and order maintained than at Monaco. The little Principality is a small paradise by reason of its unequalled climate and beauty; but, so far as sanitation is concerned, and theoretically speaking, it is not more advanced than the neighbouring French health-resorts. Practically, there is a great improvement. For instance, the French rule is that cesspools should not overflow into sewers, that they should be ventilated on the roof of the houses, and frequently emptied. These principles are strictly observed at Monaco, and very generally neglected elsewhere, and notably at Nice. Again, the scavenging of Monaco is done with such care that it would be difficult all Europe to find a cleaner place. Unfortunately the authorities are altogether behind the age in their knowledge of sanitation. They have sought no better example than what is done in Paris; and in this respect the French are notoriously half a century behind the age. With regard to the theory of sanitation, the authorities of Cannes are far ahead of the Government of Monaco. They, at least, have studied the progress realised in England, America, and Belgium. They have consulted such eminent men as Mr. Douglas Galton and Mr. Isaac Shone, and now actually propose to adopt the Memphis or Warring system of drainage. At Monaco, however, the authorities have scarcely got beyond the precepts laid down by the French administration of the Ponts et Chaussées. As the Principality is quite independent of the control exercised throughout France by this official and somewhat inert body, better things might have been expected. Nevertheless, there is, especially on the part of the Prince of Monaco, an earnest desire to do all that can in reason be accomplished to assure the material prosperity of all who live within his domains. The Crown Prince, it should also be noted, is especially fond of scientific studies, and the experiments which he has recently and successfully accomplished to test ocean currents have brought his name prominently forward. Doubtless the Prince would also appreciate the practical utility and the theoretic interest of sanitary science if these questions could be brought more prominently to his notice.

The desire to encourage sanitary improvements is sufficiently manifest. The large sums of money already spent on such purposes, and the marvellous cleanliness maintained throughout the Principality, supply ample proof of this most commendable disposition. Unfortunately, there is an absence of scientific thoroughness in the work done. Slight epidemics of diphtheria, small-pox, and typhoid fever have constantly afflicted the inhabitants of the Principality. At last, in 1883, the recurrence of these illnesses assumed alarming proportions. An epidemic of typhoid fever broke out in the old town of Monaco. Out of the 1200 persons who live on this picturesque and historic rock some 300 inhabitants were stricken by the fever. Fortunately the disease manifested itself in a mild form, as there were only twenty deaths. The epidemic was no sooner over than the authorities sought to improve the sanitary condition of the old town, first by augmenting the water-supply, and secondly by building sewers. This latter operation presented exceptional difficulties, for the town is built on solid, hard rock. At one point, the square in front of the Palace, it was necessary to hew down in the rock to a depth of six yards, so as to obtain the necessary fall. Blasting powder had to be employed, and the sewers consequently cost much more than usual. They were built on the ordinary French model. They are of the egg shape and measure some 70 centimetres by 50 centimetres, and other and larger sewers measure 1·40 metres by 80 centimetres, and 40 centimetres at the lower part or invert. The minimum fall is 15 millimetres per metre; in some parts it is equal to 20 millimetres.

It is, however, obvious that the mere building of a sewer does not solve the problem. The sewer may be admirably constructed, but it may be too large or too small for the amount of sewage that it is destined to receive. The fall also may be too steep, as well as not steep enough. But in France these considerations are rarely taken into account. The idea that a sewer should be self-cleansing is so little realised that the authorities always insist that a sewer should be large enough to allow of a man to go down and clean it. Now, at Monaco a very large sum of money has been spent to build very fine sewers; but there is no water to flush them, no provision made for their ventilation, and no regulations issued to prevent the gases they generate from entering the houses. The closets are not drained into these sewers. The difficulty, therefore, of dealing with the closets and of removing the night soil still remains unsolved, and it was scarcely worth while incurring the expense of building the sewers. But the kitchen water, washing water, &c., do drain into the sewers; and therefore—a fact which has been demonstrated over and over again, and will be found recorded in every text-book—the sewers are just as foul as if they did receive the contents of the closet. Indeed, anyone who has had any practical experience of the difficulties of drainage will testify that it is the grease in the kitchen water, the odours of the vegetable and fish water, that create by far the most nuisance and the most trouble.

As at present managed, the new sewers at Monaco must

seriously endanger the health of the population. The kitchen sinks, generally in a back room, but within the houses, drain straight into the sewer. None of them are trapped. They are simply so many sewer ventilators; and, as the sewers are not flushed, and are not self-cleansing, it may readily be imagined with what effect these pipes poison the atmosphere within the houses. It is only necessary to hold a wax taper to the orifice to note how strong is the draught that travels up and down. But to these criticisms the objection may be raised that the health of Monaco has improved. Dr. Colignon, in an eloquent and able paper read at the sixth International Pharmaceutical and Chemical Congress, estimated the death-rate for the five years from 1874 to 1879 at one death per annum per 47·3 inhabitants; while during the following five years, from 1879 to 1884, the death-rate had decreased to one death per 49·9 inhabitants. But these data are not sufficiently recent to throw much light on the subject; and the improvement on the public health, such as it may be, is undoubtedly due to the great increase and the purer quality of the water-supply, rather than to sewers which are certainly not yet in working order. It would, however, be a matter of no great difficulty to improve and complete these sewers, so that, instead of being a source of mischief, they would help to preserve the public health. No act of legislature, no increased powers, are necessary to send an inspector round to all the houses, and insist on the application of a syphon trap to every pipe communicating with the sewer. Even if these traps were inserted at the expense of the State, and not of the individual householders or tenants, the outlay would be very trivial as compared with the cost already incurred in building the sewers. While this is being done, the water of the fountains, now wastefully allowed to flow into the sea by surface gutters, should be utilised to fill automatic flush tanks, which every hour or so would discharge several cubic metres of water into the sewers. With the assistance of automatic flushing tanks there is water enough at hand to sweep the sewers and maintain a fair degree of cleanliness. Finally, it will be necessary to find some effective means of relieving the pressure of air in the sewers, and when this has been done there will remain no reason why the closets should not also drain into them. The outfall is in the deep water of the sea at the extremity of the rock. Some objection may be raised to draining into the sea; but this is what is actually done, only in an extremely clumsy and dangerous manner. The contents of the cesspool and of the pails are at the present moment conveyed by hand or in carts to the sea and emptied into it. There is no sewage farm and no sewage works. Why not, therefore, drain at once into the sea, instead of allowing highly dangerous organic matter to accumulate, decompose, and ferment in tubs, pails, and cesspools, built or kept under and within human habitations?

By following these simple and inexpensive suggestions, the very considerable work done in the old town of Monaco will not have been undertaken in vain. The Principality will then have the honour of setting an excellent example to the whole Riviera, and the Monegasque population will surely enjoy the advantage of a marked amelioration in health and freedom from zymotic disease.

MONACO.

*** The above letter has been in our hands for some weeks, and kept out of our columns by the claims of other more pressing matter. It therefore deals with the state of things existing before the recent telluric convulsions which have more or less included Monaco in its devastating effects. —ED. L.

MEDICAL NOTES IN PARLIAMENT.

The Lunacy Laws Consolidation Bill.

IN the House of Commons on the 3rd inst. Mr. Salt asked the First Lord of the Treasury whether it was proposed to incorporate the Idiots Act, 1886, in the Lunacy Laws Consolidation Bill of the present session. Mr. W. H. Smith replied that the subject had been brought under the attention of the Lord Chancellor by the Lunacy Commissioners, and the matter is now under consideration. It would, however, be premature to arrive at any conclusion on the subject before the Amendment Bill (on which the Consolidation depends) has made further progress, and the question is, Mr. Smith remarked, the more important because the legislation with reference to idiots was deliberately severed from the Bills relating to lunatics in the last Parliament.

The Vaccination Acts.

On the 4th inst., in reply to Sir C. Russell, Mr. Ritchie stated that the reason he had given for refusing the appointment of a Royal Commission of Inquiry into the vaccination question was that the Government already possessed accurate information upon the subject, and that if they consented to the appointment of a commission of inquiry, they did not believe that it would have the least effect in removing the objection of those who at present resisted the law, while, on the other hand, it might have the effect of implying doubts on the part of the Government which the Government did not feel in the slightest degree.

On the 8th inst., in answer to Mr. Picton, Mr. Matthews briefly reviewed the case of a man named Bamford who was convicted last month of non-compliance with the Vaccination Acts, and stated that he did not see his way to modify the prison treatment of a person who has disobeyed the law on the ground that such disobedience proceeded from conscientious motives, the *bona fides* of which it would be difficult to ascertain.

Post Office Medical Officers.

On the 4th inst., in reply to Mr. Pickersgill, Mr. Raikes stated that the practice in appointing medical officers attached to post offices has been, as he understood, to submit to the Postmaster-General the names of several medical gentlemen recommended by the local officers, and one of these gentlemen has usually been formally recommended by the Secretary. But the Postmaster-General has always exercised his own judgment in making the appointment. There was no ground for suggesting that the Secretary's recommendation had been slighted in any case where he had made an appointment upon other local information.

Rivers Pollution Prevention Act (1876) Amendment Bill.

On the motion of Mr. Thorburn, leave was given to bring in a Bill to amend the Rivers Pollution Act (1876), and the Bill was subsequently brought in and read a first time.

Accommodation for Prisoners awaiting Trial.

On the 7th inst. Sir John Kennaway gave notice that on Monday next he will ask the Secretary of State for the Home Department what steps the Government intend to take to deal with the evils shown to exist by the report of the Committee on the accommodation of Court-houses and other places for prisoners awaiting trial at assizes and sessions.

The Lunacy Laws.

On Thursday in the House of Lords the report of amendments on the Lunacy Laws was received and considered. The Lord Chancellor said his amendment of Sub-section 11 sought to give an alleged lunatic the right to be examined by the County Court judge or magistrate before an order for his removal to an asylum is made. Lord Herschell pointed out that there might be a difficulty in respect of the ability of the judge or magistrate to examine the person within the time specified by the Bill.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT an ordinary meeting of the Council held on Thursday last, Mr. H. G. Howse was admitted a member of the Court of Examiners. A report from the Committee on the forms of the College diplomas was approved and adopted, and these will be issued directly by the Council instead of by the Court of Examiners as formerly.

It was agreed, in the report of the President and Vice-Presidents, "That the offer of Mr. J. T. Morton for the institution of a Lectureship on Cancer and Cancerous Diseases, for the period of three years, as an experiment, be accepted; and that there should be one lecture on the subject delivered in each year."

The subject of the form of the new Charter having been mentioned to the Council, and the difficulties in giving effect to the resolution of the Council, admitting Members of fifteen years' standing to the fellowship without examination in anatomy and physiology, having been pointed out to them, the Council rescinded their resolution.

It was agreed to accept the recommendation of the

delegates as to the best mode of celebrating the Queen's Jubilee, and to place a statue of Her Majesty in the new Examination Hall.

A letter was read from the Conjoined Associations of Fellows and Members declining to meet the delegates of the Council on the terms required by that body.

A communication was received from the Association of General Practitioners requesting a conference with the Council, and it was agreed that the President and Vice-Presidents should receive a deputation from the Association, the latter to define the subject of the proposed discussion. A communication was also received from Sir F. Abel asking the Council to bring the proposed Imperial Institute under the notice of the Fellows and Members of the College.

A report from Mr. Marshall on the proceedings of the General Medical Council was read.

A letter from the President of the Medical Council was read, asking the Council of the College to reconsider their determination regarding the non-admission of the Apothecaries' Society to the conjoint examinations. This was postponed to an extraordinary meeting of the Council to be held on the 24th of this month.

A memorial was read from teachers of surgery in London, and referred to the Committee on the Extension of the College Premises.

A communication from University College, Bristol, asking that the degrees of the Royal College of Physicians and the Royal College of Surgeons should not be reserved for students who have pursued their clinical studies in London only, was referred to the committee of delegates of the two Colleges.

Obituary.

NICOLA GASPARRI.

FEW situations in modern warfare have evoked greater heroism than the stand made by the Italian column under Col. di Cristoforis against the thousands of Abyssinians who hemmed them in at Dogali. When man by man the European force of five hundred had fallen till only twelve, including the brave colonel himself, remained to continue, in spite of wounds, the unequal combat, Di Cristoforis ordered the eleven to present arms to their fallen comrades. He was obeyed, but in a few minutes thereafter he was struck down, and the others with him. Just before this fine act of disciplined heroism, there had fallen Dr. Nicola Gasparri, fighting like the rest, though he was the surgeon attached to the column. He was but in his thirty-third year, and had already given proof of high professional ability. He was born in Rome, though his family were from the Marches—on the father's side natives of Urbisaglia. Left an orphan before his teens, he was educated by two maternal uncles, one of whom, Prof. Cozzi of the University of Urbino and mayor of that town, adopted him as his son. At the University of Macerata his studies were prosecuted under the happiest auspices; and when he left it a graduate in Medicine and Surgery in 1876, he carried with him the admiration and affection of all his fellow-students. In compliance with his earnest wish he became an army medical officer, and by the time he had reached his thirty-third year he had risen to be medical captain attached to the 15th Regiment of Infantry. A pleasant episode in his career was the journey he made through India with the distinguished physician Dr. Paul Mantegazza, after which very active service awaited him. He was at his own request transferred to Massowah, and a few days before the fatal march on Dogali he had written to his uncle, Prof. Cozzi, at Urbino, in the gayest mood, asking how he thought the carnival was to go off, telling him of the advance of the Abyssinian chief, Ras Alula, and adding, "we hope in carnival week to pepper Ras Alula with the *coriandoli* [comfits] of our Wetterly rifles." This letter was dated January 21st, and on the 26th occurred the terrible encounter in which its writer met a hero's death. It is believed that Dr. Gasparri, on hearing of Col. di Cristoforis's contemplated march to relieve the garrison at Saati, asked, and obtained leave, to join the column.

A NEW semi-convalescent home in connexion with the Leeds Infirmary is about to be erected at Cookridge, at a cost of about £5000.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations, were admitted Licentiates in Dental Surgery at a meeting of the Board of Examiners on Feb. 24th:—

Buckley, Charles Herbert, Shaw-road, Oldham.
Clifford, Isidore, Grosvenor-street.
Cunningham, George, King's-parade, Cambridge.
Dalby, Alfred Burkett, Rodney-street, Liverpool.
McAlpin, Kenneth Wade, Tregunter-road, South Kensington.
Thomson, Archibald Frederick Charles, Guilford-street, Russell-square.
Harris, Percy Reeves Trier, M.R.C.S., Chapel-street, Penzance, Cornwall.

Professor Charles Stewart, M.R.C.S., commenced on Wednesday, the 9th inst., a course of nine lectures on "The Auditory Organs of the Vertebrata," and on "Some Recent Additions to the Museum," which will be continued on Fridays, Mondays, and Wednesdays, March 11th, 14th, 16th, 18th, 21st, 23rd, 25th, and 28th. The lectures will be delivered in the theatre of the College at 4 o'clock each day.

SOCIETY OF APOTHECARIES.—The following gentlemen passed the examination in the Science and Practice of Medicine, Surgery, and Midwifery, and received certificates to practise on March 3rd:—

Bullock, Roger, M.R.C.S., East Gate, Warwick.
Deacon, George Edward, M.R.C.S., Hethersett, Norfolk.
Fischer, William Featon, M.R.C.S., Bembridge, Isle of Wight.
Gowan, Bowie Campbell, Gloucester-road, South Kensington.
Hubbard, Walter Lovett, The Grove, Clapham-road.
Williams, William, Bagair Gawr, Dolgelly, Wales.

VACCINATION GRANT. — Mr. John Hamilton, of Swadlincote, has received, for the fifth time, a Government gratuity for efficient vaccination in the Church Gresley district of the Burton-on-Trent Union.

ON the 4th inst. a public meeting in aid of the funds of the East London Hospital for Children and Dispensary for Women, at Shadwell, was held at the Mansion House, under the presidency of the Lord Mayor.

AT the annual meeting of the directors of and subscribers to the Paisley Infirmary, on the 1st inst., an unsatisfactory financial report was presented, the debt having increased during the year from £161 to £693.

WESTMINSTER HOSPITAL.—Shortly after Easter two performances will be given at the Novelty Theatre in aid of the fund which is now being raised for the endowment of a children's ward in this institution.

AT the annual meeting of the subscribers to the Monmouth Hospital and Dispensary on the 1st inst., a highly satisfactory financial report for the past year was presented and adopted.

FOUR CHILDREN AT A BIRTH. — A woman named Corrigan, living in the County Leitrim, was last week delivered of four children, three girls and a boy. All the children are doing well.

ZYMOTIC DISEASE AT GOOLE.—In consequence of the extensive prevalence in Goole of measles and scarlet fever, the School Board have decided to close their schools for a fortnight.

THE Royal Albert Hospital at Devonport being greatly in need of support, arrangements are being made for a grand amateur theatrical performance to be given in Devonport Theatre on Easter Tuesday.

HOSPITAL SATURDAY FUND.—At a meeting of the delegates of this fund on the 5th inst. it was resolved that the ladies' street collection for the present year take place on June 11th, instead of on June 25th, as previously arranged.

ASSOCIATION OF PUBLIC SANITARY INSPECTORS.—At the annual meeting of the members of this Association on the 5th inst., Mr. J. A. Davenport read a paper on "Rural Sanitation." A discussion, in which several members took part, followed.

WARNEFORD HOSPITAL, LEAMINGTON.—The fifty-fourth annual meeting of the governors of this institution was held on the 2nd inst. During the past year there have been 1135 in-patients and 5614 out-patients treated. The financial report was fairly satisfactory.

BEQUESTS.—The late Captain Hamlet Geary, of Dublin, has bequeathed £500 to Jervis-street Hospital, £500 to Mercer's Hospital, £500 to the Meath Hospital, £400 to the Deaf and Dumb Institution, Claremont, and £200 to the Hospital for Incurables.—Mrs. Elizabeth Hughes has left £997 2s. 5d. to the Convalescent Home, Stillorgan.

ABERDEEN SICK CHILDREN'S HOSPITAL.—The annual meeting of the subscribers to this institution was held on the 2nd inst. when it was reported that the number of in-patients treated during 1886 was 355 as against 180 in the previous year, and of out-patients 988. The income amounted to £935, and the expenditure to £1113. A considerable sum has also yet to be raised to meet the expense attending the recent extension of the hospital building.

NATIONAL HEALTH SOCIETY.—On March 1st, at the Paddington Baths, Queen's-road, Bayswater, the Society's certificates were presented by Lady Randolph Churchill to the successful candidates in connexion with the popular Health and Ambulance Lectures recently delivered under the auspices of the Society by Dr. A. T. Schofield. The chair was taken by Dr. Langdon Down, who remarked that the results of the examination reflected the greatest credit upon Dr. Schofield, the lecturer, as well as upon the candidates themselves.

THE LIBRARIAN OF ST. THOMAS'S HOSPITAL.—Many of our readers will learn with regret that Mr. E. H. Denison, who has occupied the position of librarian to St. Thomas's Hospital for the last twenty-five years, has resigned his post. Several of his numerous friends have expressed a wish to give him a testimonial as an indication of the esteem in which he is held, and the first appeal has been most successful. Subscriptions not exceeding a guinea may be sent to any of the treasurers, Messrs. W. Anderson, G. H. Makins, and J. E. Nichol.

EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY, INDIAN, AND NAVAL MEDICAL SERVICES.

NATURAL SCIENCES.

Tuesday, February 15th, 1887.

Zoology.—1. What are the more important modifications presented by the respiratory organs in the adult amphibia? Give one or more examples of each. 2. In what group of the cephelopoda is the ink sac absent? Mention some of the characters which are here specially associated with the absence of an ink sac. 3. Refer to its proper class and order an animal with the following characters, and give one or more examples:—Animal radially symmetrical, with multicellular composition; œsophagus differentiated from the general body cavity, but freely opening into it, and united to the walls of the cavity by radiating mesenteric folds.

Botany.—4. What is the most important difference, as regards anatomical structure, between a moss and a fern? 5. Select any flowering plant you please, and give an accurate description of its pistil. 6. Refer to its natural order a plant with the following characters, and give one or more examples:—Leaves alternate, without stipules. Calyx formed of two sepals which are caducous. Corolla with four petals. Stamens numerous, inserted on the receptacle. Fruit, a single-celled capsule with parietal placentæ. Seeds numerous, with oily albumen.

Physics.—7. An electric current is made to pass through a copper wire above and parallel to the length of a horizontally suspended magnetic needle. What is the effect of the current on the needle? 8. What temperatures on the Centigrade scale correspond to 32°, 140°, and 210° Fah.? 9. What is meant by a river delta? Mention the principal river deltas of the world.

MEDICINE.

Tuesday, February 15th, 1887.

1. A case [given] for analysis and commentary. 2. Name the round worms that have been found in man and their habitat in the human body Explain the mode of development of those you name, and how they find access to the parts of the body in which they are found. 3. Describe the symptoms, course, and differential diagnosis of enteric fever. 4. How would you treat a case of fæcal accumulation in a child, and how is the accumulation to be distinguished from tubercular mesenteric glands? 5. Name the officinal drugs used as emetics. Explain their actions, their uses, and the peculiarities in the action of each.

SURGERY.

Monday, February, 14th, 1887.

1. Describe the process of union of bone in a simple and also in a compound fracture, the conditions under which union may be retarded, and the treatment to be adopted under the latter circumstances. 2. What are the various pathological changes observed in cases of enlarged thyroid gland? Describe the treatment to be pursued in each condition. 3. What symptoms would indicate the existence of abscess of the antrum? What are its chief causes, and what treatment is best for its relief? 4. What are the distinctive characters of a hard and of a soft chancre? How should either be treated locally and constitutionally? What are the sequelæ which usually follow infection? 5. Describe the conditions known as carbuncle. Under what constitutional state does it most frequently occur, and what should be the treatment? 6. A patient is the subject of empyema, the result of acute pleurisy, and immediate relief is requisite. Describe the means by which this may be afforded, and the changes which must occur to ensure the subsequent obliteration of the cavity. Should this obliteration not be effected naturally, what measures should be adopted to produce it?

CHEMISTRY.

Tuesday, February 15th, 1887.

1. What are the more important properties of hydrogen? How may hydrogen be prepared? 2. Write down as an equation the decompositions and new combinations which occur in the process of obtaining ammonia gas by heating ammonia hydrochlorate with quicklime. 3. What are the chief sources of the presence of carbonic acid in the atmosphere?

ANATOMY AND PHYSIOLOGY.

Monday, February 14th, 1887.

1. Describe the astragalus: give an account of its articulations, connexions, and parts of importance which are in proximity to it. 2. Describe the origin, course, distribution, and anatomical relations of the genito-crural nerve. 3. Describe the diaphragm, giving an account of its structure, origin, and insertion, the parts of importance which pass through or are related to it, and the functions which it performs. 4. Describe the thoracic duct, giving an account of its origin, anatomical relations, and structure; also describe the composition, properties, and purposes in the animal economy of its contents. 5. Describe the origin, course, and distribution of the facial artery, giving also a brief account of the dissection by which you would expose the vessel and its branches.

BOOKS ETC. RECEIVED.

BAILLIÈRE ET FILS, Paris.

Traité Elémentaire de Pathologie Générale. Par Prof. H. Hallopeau. Deuxième Edition. pp. 836, avec 145 figures.

BATSFORD, B. T., High Holborn, London.

The Plumber and Sanitary Houses. By S. Stevens Hellyer. Fourth Edition. pp. 429, with Illustrations.

BELL, G., & SONS, York-street, Covent-garden.

Rest and Pain. A course of Lectures on the Influence of Mechanical and Physiological Rest in the Treatment of Accidents and Surgical Diseases, and the Diagnostic Value of Pain. By the late John Hilton, F.R.S. Edited by W. H. A. Jacobson, M.B.Oxon., F.R.C.S. Fourth Edition. pp. 514.

CHURCHILL, J. & A., New Burlington-street, London.

The Organic Materia Medica of the British Pharmacopœia. By W. Southall, F.L.S. Fourth Edition. pp. 347.

A Practical Treatise on the Cure of Pulmonary Consumption. By Jas. Weaver, M.D., L.R.C.P. pp. 91.

Short Contributions to Aural Surgery. By Sir W. B. Dalby, F.R.C.S., M.B.Cantab. pp. 78.

Elementary Practical Biology (Vegetable). By Thos. W. Shore, M.D., B.Sc.Lond. pp. 173.

Clinical Studies of Disease in Children. By Eustace Smith, M.D. Second Edition. pp. 318.

CLARENDON PRESS, Oxford.

Alphita: a Medico-Botanical Glossary from the Bodleian MS. Selden, B. 35. Edited by J. L. G. Mowat, M.A. pp. 243.

DORNAN, W. J., Philadelphia.

Transactions of the Association of American Physicians. First Session. pp. 261, Illustrated.

JARROLD & SONS, Norwich.

Norwich and Eastern Counties Almanack and Clerical Directory for 1887.

JONES, J., New Orleans, La., U.S.A.

Medical and Surgical Memoirs, 1855-86. By Joseph Jones, M.D., Professor of Chemistry and Clinical Medicine, University of Louisiana. pp. 1348, with Illustrations.

LONDON STEREOSCOPIC & PHOTOGRAPHIC COMPANY, Regent-street, London.

The A B C of Photography. pp. 149.

LONGMANS, GREEN, & Co., Paternoster-row, London.

Hip Disease in Childhood, with special reference to its Treatment by Excision. By G. A. Wright, M.B.Oxon., F.R.C.S.Eng. pp. 246, with 48 Original Woodcuts.

MASSON, G., Paris.

La Névrose. Par le Dr. M. Leven. pp. 336.

MATHIESON & SON, Bank, London.

Mathieson's Vade-Mecum for Investors. Fourth Issue. pp. 588.

PENTLAND, YOUNG J., Edinburgh.

The Diseases of the Ear, and their Treatment. By Arthur Hartmann, M.D.Berlin. Translated from the Third German Edition by Jas. Erskine, M.A., M.B. pp. 283, with 42 Illustrations.

Atlas of Venereal Diseases. By P. H. Maclaren, M.D., F.R.C.S.E. Thirty Plates, Coloured, with Descriptive Letter-press.

PICKARD & CURRY, Great Portland-street, London.

Vision and Vision-testing, with Practical Tests. By A. St. Clair-Buxton, F.R.C.S. pp. 83, Illustrated.

SAMPSON LOW, MARSTON, SEARLE, & RIVINGTON, Fleet-street, London.

Variations of Fortune, Illustrated by some of the Old Towns of Italy and those who Influenced them. pp. 185, Illustrated.

Pilocereus Senilis, and other Papers. By Walter Moxon, M.D., F.R.C.P. pp. 262.

SAVY, F., Paris.
Leçons sur les Auto-Intoxications dans les Maladies. Par Prof. Ch. Bouchard. Recueillies et publiées par le Dr. P. le Gendre. pp. 348.

SPOTTISWOODE & Co., Gracechurch-street; EFFINGHAM WILSON, Royal Exchange.
Burdett's Official Intelligence for 1887. By Henry C. Burdett, pp. 1182.

WRIGHT, J., & Co., Bristol; HAMILTON, ADAMS, & Co., London.
The Medical Annual for 1887. pp. 550.

An Experimental Study of Mycotic or Malignant Ulcerative Endocarditis; by T. M. Prudden, M.D. (New York).—Notes on the Physical Diagnosis of Lung Disease; by J. M. Finny, M.D. (*H. K. Lewis*).—On Hospital and Medical Reform in Dublin; by J. P. Doyle, L.R.C.S.I., &c.—Andermatt als Winter-Kurort; Eine Klimatologische-medicinische Skizze von Dr. Martin Neukomm (Zurich, Orell Fussli & Co).—Medical Galvanism; by Herbert Tibbits, M.D. (Churchills).—Index Medicus, Vol. IX., No. 1.—Animal Food in Health and Disease: being a Reply to Sir H. Thompson and others; by John Beckett, M.D. 1s.—Immodesty in Art; by F. G. Lee, D.D., F.S.A.—The Liberal and Radical Year-book for 1887.—On Intra-pulmonary Injections; by Arthur Ransome, M.A., M.D.—Jahrbücher für Nationalökonomie und Statistik; gegründet von Bruno Hildebrand, herausgegeben von Dr. J. Conrad, Band 14, Hefts 2.—Litholapaxy in Male Children and Male Adults; by Surg.-Major D. F. Keegan, M.D.Dub. (Churchills).—The Royal London Ophthalmic Hospital Reports, Vol. IX., part 3.—Farthing Dinners; by G. H. Sargent; Second Edition (Simpkin, Marshall and Co.) 2d.—Report on Diseases of the Rectum; by J. M. Mathews, M.D. (Louisville). — The Apache-Yumas and Apache-Mojaves; by W. H. Corbusier, M.D. — Die Gesundheitspflege in der Mittelschule; von Dr. Leo Burgerstein (Holder, Wein).—Rule in Ireland from St. Patrick to Cromwell; by T. Wharton Jones, F.R.S 6d. Bulletin de la Société des Médecins et Naturalistes de Jassy.—Magazines for March: Good Words; Sunday Magazine; Leisure Hour; Sunday at Home; Boys' Own Paper; Girls' Own Paper.—Practical Hints on House-Drainage for House-owners and others; by a Clerk of Works; Second Edition. 1s. (Scientific Publishing Company.)

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BLUMER, F. MILNES, A.B., M.B., has been appointed Honorary Physician to the Staffordshire General Infirmary, Stafford, vice C. H. Crawford, M.D., resigned.

BRADBURY, ARNOLD F., M.B., B.S., has been appointed District Surgeon to the Salford and Pendleton Royal Hospital and Dispensary, vice J. E. Pilkington, appointed House-Surgeon.

BUNCLE, ALEXANDER, M.P., C.M. Ed., has been re-elected Medical Officer of Health for Pontefract.

DINGLE, WILLIAM ALFRED, L.R.C.P.Lond., M.R.C.S., L.S.A., has been appointed Surgeon to the Royal Maternity Charity.

ELLIOTT, CHARLES N., M.B., M.Ch., T.C.D., has been appointed Medical Officer for the Oundle District of the Oundle Union.

FENWICK, CHARLES, L.R.C.S., L.R.C.P. Ed., has been appointed Medical Officer for the Dunsford District of the St. Thomas's Union.

GRIME, THOMAS J., M.B., C.M.Glas., has been appointed Medical Officer for the Higher District of the Aysgarth Union.

GULLAND, G. LOVELL, M.A., B.Sc., M.B., C.M., has been elected Resident Physician to the Royal Edinburgh Hospital for Sick Children.

HEYGATE, WILLIAM H., M.R.C.S., L.S.A., has been appointed Medical Officer for the Cosham District of the Fareham Union.

HOLTHOUSE, EDWIN H., M.A., M.B. Cantab., F.R.C.S., has been appointed Assistant Surgeon to the Western Ophthalmic Hospital.

JOHNSTON, GEORGE, M.B., C.M., has been appointed Medical Officer for the Fifth District of the Drayton Union.

LEWIS, PERCY G., M.R.C.S., L.S.A., late House-Physician to King's College Hospital, has been appointed Junior House-Physician to the Royal Hospital for Diseases of the Chest, City-road, E.C.

MASTERS, ALFRED THOMAS, L.S.A., has been appointed Medical Officer to the Ancient Order of Foresters' Club of the Rotherfield Districts, and to the Tradesmen's Club of the Rotherfield Districts, vice Matthew Mackintosh, M.R.C.S., deceased.

OWENS, E. M., M.R.C.S., L.R.C.P.Ed., Honorary Ophthalmic Surgeon to the Children's Hospital, Brisbane, Queensland, has been appointed Honorary Consulting Ophthalmic Surgeon to the Toowoomba Hospital, Queensland; also Honorary Consulting Ophthalmic Surgeon to the Ipswich Hospital, Queensland.

PILKINGTON, JOHN EDGAR, M.R.C.S., has been appointed House-Surgeon to the Salford and Pendleton Royal Hospital and Dispensary, vice Fred. Hyde Foljes, M.R.C.S., resigned.

SEMON, FELIX, M.D. Berlin, F.R.C.P.Lond., has been appointed Laryngologist to the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury.

STADDEN, WALTER J., M.R.C.S., L.R.C.P., has been appointed Assistant Surgeon to the Leeds Workhouse Infirmary, vice Hawkyard, resigned.

STEELE, ELMES Y., L.R.C.S., L.R.C.P. Ed., has been appointed Medical Officer for the Abergavenny District of the Abergavenny Union.

TAYLOR, JAMES, M.A., M.B., C.M., has been elected Resident Physician to the Royal Edinburgh Hospital for Sick Children.

Vacancies.

In compliance with the desire of numerous subscribers, it has been decided to resume the publication under this head of brief particulars of the various Vacancies which are announced in our advertising columns. For further information regarding each vacancy reference should be made to the advertisement.

BEDFORD CENTRAL PROVIDENT DISPENSARY.—Medical Officer.

BETHLEM HOSPITAL. — Two Resident Medical Students who have recently obtained their diplomas to practise medicine and surgery. Apartments, rations, and attendance.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary £80 per annum, with board and apartments.

CHILDREN'S HOSPITAL AND DISPENSARY, Manchester.—Medical Officer. Salary £180 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Pathologist.

DERBYSHIRE GENERAL INFIRMARY, Derby. — House-Surgeon. Salary £100 for the first year, increasing £10 a year up to £150, with apartments, board, and washing.—Resident Assistant House-Surgeon. Board and washing. No salary, but a bonus of £10 is given.

EASINGWOLD UNION. — District Medical Officer. Salary £26 per annum, exclusive of the authorised fees for surgical and midwifery cases.

FISHERTON ASYLUM, Salisbury.—Assistant Medical Officer. Salary £100 per annum with board, lodging, and washing.

GENERAL HOSPITAL, Birmingham.—Resident Surgical Officer. Salary £130 per annum, with residence, board, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL. — House-Surgeon. Salary £70 per annum, with board, lodging, and laundry expenses.

MALE LOCK HOSPITAL, Dean-street, Soho.—House-Surgeon. Salary £50 per annum, with board and lodging.

OWENS COLLEGE, Manchester.—Senior Demonstrator in Physiology. Stipend £150 per annum.—Junior Demonstrator in Physiology. Stipend £100 per annum.

PARISH OF PUTNEY. — Medical Officer of Health. Salary £75 per annum, rising (subject to the order of the Board of Works for the Wandsworth District) by annual increments of £5 each to a maximum of £100 per annum.

ROYAL FREE HOSPITAL, Gray's-inn-road. — Junior Resident Medical Officer. Board and residence are provided in the hospital.

ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.—Assistant House-Surgeon. Salary, with board and residence, £80 per annum.

STOCKPORT INFIRMARY.—Assistant House-Surgeon. Salary £70.

YORK COUNTY HOSPITAL.—Assistant House-Surgeon.

ZENANA MEDICAL COLLEGE, St. George's-road, S.W. — Midwifery Students. Terms 25 guineas for three months, including board, residence, and instruction.

Births, Marriages, and Deaths.

BIRTHS.

DELMEGE.—On the 4th inst., at Cavendish-road, Southsea, the wife of Staff-Surgeon A. G. Delmege, R.N., Royal Yacht *Osborne*, of a son.

GRAY.—On the 2nd inst., at Holsworthy, North Devon, the wife of Walter Gray, M.R.C.S., of a son.

HILL.—On the 7th inst., at Wimpole-street, the wife of Berkeley Hill, M.B., F.R.C.S., of a son.

STARK.—On the 27th ult., at Becket House, Wantage, the wife of M. Dugald Stark, M.D., C.M., of a son.

STREET.—On the 17th ult., at Nasik, Bombay Presidency, the wife of A. W. F. Street, M.R.C.S., L.R.C.P.Lond., I.M.D., 2nd Bombay Lancers, of a son.

WHISTLER.—On the 28th ult., the wife of the Rev. C. W. Whistler, M.R.C.S., Chaplain of the Fishermen's Church, Hastings, of a daughter.

MARRIAGES.

DAVIES—MCLAREN.—On the 22nd ult., at Dunedin, New Zealand, J. M. Lloyd Davies, M.R.C.S., L.R.C.P.Ed., to Maude, third daughter of Robert McLaren, Esq., of Dunedin.

GROSS—KEIZER.—On the 8th inst., at the St. John's-wood Synagogue, Abbey-road, N.W., Asher Gross, L.R.C.P., M.R.C.S., to Julia, only daughter of the Rev. Moses Keizer, of Brondesbury-road, Kilburn, N.W.

MORISON—HERNE.—On the 3rd inst., at Upton Church, Cheshire, by the Rev. W. Sparling, Basil Gordon Morison, M.B., C.M.Edin., of Canonbury, London, son of the late Surgeon A. C. Morison, H.E.I.C.S., to Agnes Caroline, eldest daughter of Lieut.-Col. Herne, late 103rd Regiment.

DEATHS.

FRANCIS. — On the 6th inst., at Brighton, D. J. T. Francis, M.D., F.R.C.P.Lond., aged 67.

GREER.—On the 3rd inst., at his residence, Thornton Lodge, Northallerton, Yorkshire, Arthur Jackson Greer, Deputy Surgeon-General, H.P., late of the 21st Fusiliers and 17th Lancers, aged 56.

MILLER.—On the 2nd inst., at Rosendale Hall, West Dulwich, William Miller, M.R.C.S., aged 79.

SCOTT.—On the 7th inst., at Camden-square, N.W., suddenly, David Scott, M.D., aged 60.

SYRÉE.—On the 9th ult., at Northallerton, Florence Mary, wife of Anton Hugh Syrée, M.R.C.S., L.S.A., aged 28.

N.B.—*A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

Medical Diary for the ensuing Week.

Monday, March 14.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10.30 A.M., and each day at the same hour.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M.,

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M; Thursday, 2.30, and each day at the same hour.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITALS.—Operations, 2 P.M., and each day in the week at the same hour.

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. H. H. Fenwick: On Ureteral Clottage.—Mr. Bruce Clarke: On certain Conditions of the Bladder that simulate Stone in Children.

Tuesday, March 15.

GUY'S HOSPITAL.—Operations, 1.30 P.M. and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2.30 P.M.; Saturday, 2.30 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 1.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M.

ROYAL INSTITUTION.—3 P.M. Prof. Gamgee: Function of Respiration.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. Broadbent: The Pulse (Croonian Lecture).

SOCIETY OF ARTS.—8 P.M. Mr. Alfred Phillips: The Application of Gems to the Art of the Goldsmith.

PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Doran: Fibroma of Ovarian Ligament.—Mr. Fenwick: Metastatic Carcinoma of Prostate.—Mr. Clutton: Large Dermoid Cyst over Sternum.—Mr. Eve: Cystic Disease of Testicle.—Dr. Pye-Smith: Gall-stone which caused Obstruction of the Bowel.—Mr. Bowlby: Multilocular Cystic Epithelioma of Jaw.—Dr. Silcock: Cystic Epithelioma of Neck.—Mr. Hutchinson, jun.: Alveolar Ulceration in a Child, General Tuberculosis. Card Specimens:—Mr. Godlee: Malignant Disease of an Undescended Testis, with Secondary Growths.—Mr. Stonham: Pelvis of a Child with a Persistent Fœtal Condition of Peritoneum.—Mr. F. W. Clark: Subpleural Lipoma of Diaphragm.—Dr. A. H. Robinson: Drawings of Charcot's Joint Disease.—Dr. Ormerod: Subdural Hæmatoma.

Wednesday, March 16.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M.; Thursday & Saturday, same hour.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Saturday, 2 P.M. Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

KING'S COLLEGE HOSPITAL.—Operations, 3 to 4 P.M.; Friday, 2 P.M.; Saturday, 1 P.M.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9 A.M.; Saturday, same hour.

SOCIETY OF ARTS.—8 P.M. Mr. Percy Fitzgerald: Machinery and Appliances used on the Stage.

Thursday, March 17.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

NORTH-WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ROYAL INSTITUTION.—3 P.M. Prof. F. Max Müller: Science of Thought.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. Broadbent: The Pulse (Croonian Lecture).

PARKES MUSEUM OF HYGIENE.—5 P.M. Dr. E. F. Willoughby: George Varrentrapp, Sanitarian and Philanthropist.

HARVEIAN SOCIETY OF LONDON.—8.30 P.M. Dr. W. H. Day: Habitual Constipation in Children, and the Methods of Treatment.—The President: A case of Congenital Syphilis.

Friday, March 18.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—7.30 P.M. Dr. W. N. Thursfield: (1) A Contribution to the Etiology of Congenital Deformities with a special bearing on State Medicine; (2) A recent case of Contagious Carbuncle in the Human Subject.

CHARING-CROSS HOSPITAL MEDICAL SOCIETY.—7.45 P.M. Mr. A. W. Finch Noyes: Jacksonian Epilepsy.

ROYAL INSTITUTION.—9 P.M. Mr. George John Romanes: Mental Differences between Men and Women.

Saturday, March 19.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.

ROYAL INSTITUTION.—3 P.M. The Rt. Hon. Lord Rayleigh: On Sound.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 10th, 1887.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Max. Temp. Shade.	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Mar. 4	30·49	E.	33	33	...	41	32	...	Foggy
,, 5	30·32	E.	35	35	60	40	32	...	Foggy
,, 6	30·24	E.	39	37	67	50	34	...	Overcast
,, 7	30·29	E.	39	37	51	45	36	...	Overcast
,, 8	30·19	E.	41	39	...	43	39	...	Overcast
,, 9	30·05	W.	40	38	...	45	38	...	Foggy
,, 10	30·11	N.E.	41	39	...	45	39	...	Overcast

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked and addressed to the Sub-Editor.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "to the Publisher."*

We cannot undertake to return MSS. not used.

THE MOXON MEMORIAL FUND.

President: Sir William Jenner, Bart., K.C.B., M.D., F.R.S.

THE following contributions have been received since those acknowledged on March 5th. All subscriptions should be forwarded to the honorary treasurer, R. Clement Lucas, B.S., F.R.C.S., 18, Finsbury-square, E.C., by whom they will be acknowledged, and cheques should be crossed "City Bank."

Laundy Walters, Esq. ...	£10	10	0	P. B. Baldwin, Esq. ...	£1	1	0
W. S. Savory, M.B., F.R.C.S.	5	5	0	H. P. Berry, M.D.... ...	1	1	0
D. P. Lee, Esq.	5	5	0	F. J. Hindle, Esq.... ...	1	1	0
H. E. Williams, Esq. ...	5	5	0	A. B. Elliott, Esq.... ...	1	1	0
Thomas Joyce, Esq. ...	5	5	0	W. Hale White, M.D. ...	1	1	0
Christopher Gayleard, Esq.	5	5	0	E. E. Winckworth, Esq....	1	1	0
The Editors of THE LANCET	5	5	0	Percy Gardner, Esq. ...	1	1	0
Edward Cock, F.R.C.S....	5	0	0	W. Bramley Taylor, Esq.	1	1	0
Joseph May, Esq., jun....	5	0	0	A. J. Harrison, M.B., J.P.	1	1	0
J. H. Lloyd, Esq. ...	3	3	0	Bransby Roberts, M.D. ...	1	1	0
Mrs. Laundy Walters ...	2	2	0	F. Gordon Brown, Esq. ...	1	1	0
F. Charlewood Turner, M.D.	2	2	0	B. Baxter Forman, M.D.	1	1	0
P. Horrocks, M.D. ...	2	2	0	George Padley, Esq. ...	1	1	0
James Beddard, M.B. ...	2	2	0	Thos. Stevenson, M.D. ...	1	1	0
F. T. Roberts, M.D. ...	2	2	0	J. J. Nason, M.B., J.P. ...	1	1	0
H. Kenneth, Esq. ...	2	2	0	W. Reynolds, Esq.... ...	1	1	0
Byrom Bramwell, M.D.	1	1	0	B. N. Dalton, M.D. ...	1	1	0
J. H. Hind, M.D. ...	1	1	0	Hugh Bennett, Esq. ...	1	1	0
G. W. Brumwell, Esq. ...	1	1	0	J. B. Trap, Esq.	1	1	0
Chauncy Puzey, Esq. ...	1	1	0	T. S. Marley, M.D. ...	0	10	6
A. Carrol Otway, Esq. ...	1	1	0	Walter Kidd, M.D. ...	0	10	6
R. H. Perks, Esq.... ...	1	1	0	J. H. Gibson, Esq. ...	0	10	6
N. Davies-Colley, M.C....	1	1	0	Surgeon E. S. Marder ...	0	10	6
				B. Walker, Esq.	0	10	6
				C. T. Griffiths, Esq. ...	0	10	6

Errata.—The name of T. A. Spalding was the name on the cheque for £2 2s. sent by Dr. L. E. Shaw, which was thus twice acknowledged last week. "J. F. Table, Esq." should be J. F. *Tabb*, Esq. The names of Dr. Langdon Down and W. A. Garrard, Esq., each for £1 1s., were omitted last week.

Mr. G. W. Hambleton.—There can be no objection to publishing the cases with the treatment adopted.

Dr. C. J. Parsons.—An advertisement, no doubt.

"THE MEDICAL PROFESSION AND LIFE ASSURANCE OFFICES."

To the Editors of THE LANCET.

SIRS,—I was one of those favoured, as was Dr. Thursfield, by a communication from the National Life Assurance Society, and, like him, I indignantly declined to enter into an engagement which, in my opinion, would be most injurious to the interests of the profession, as well as to the offices themselves.—I am, Sirs, yours faithfully,

Cardiff, March 9th, 1887. C. T. VACHELL, M.D. Lond.

STEAMSHIP ARRANGEMENTS FOR THE AMERICAN CONGRESS.

Mr. Boyd B. Joll states that, so far as he can ascertain, the reason why the principal American steamship companies, such as the "White Star" and "Cunard" lines, have not offered to make any reduction in the tariff for members of the medical profession who purpose attending the Congress at Washington in September next is that so few have hitherto signified their intention of being present at the meeting. If those who wish to proceed by one of the Royal Mail lines will communicate with Mr. Joll, stating by which company's steamers they wish to travel, he will wait upon certain of the directors of these lines with whom he is personally acquainted, and see what reduction they can be induced to make. Of course, the greater the number proceeding by one line of steamers, the better chance of getting favourable terms with the directors.

Assistants will do well to follow the custom which has hitherto been observed in the locality.

Mr. H. C. Fox.—The address is No. 2, Delamere-crescent, Bayswater, W.

Mr. Patwardhana (Poona).—We cannot exchange.

PROVIDENT DISPENSARIES: THE WANDSWORTH MEDICAL AID SOCIETY.

To the Editors of THE LANCET.

SIRS,—If Mr. COX, by the aid of Johnson's Dictionary, described to Mr. Bouncer the correct definition of a grumbler as being a "person who finds fault without cause," your correspondent, in his letter of to-day, in rejoinder to Mr. Dickinson's of Dec. 7th on the above subject, has very properly adopted that designation. As regards provident dispensaries in general and the Wandsworth Provident Dispensary in particular, his opinion may be allowed to pass, but as regards the Wandsworth Medical Aid Society, his remarks demand some comment, for he is wrong in his facts, in his premisses, and in his conclusions concerning that institution. The latter is not a charitable society; based on the principle of mutual assurance, it is independent of eleemosynary or other extraneous aid, and is entirely self-supporting. By payments that are very small from each individual, but which collectively furnish a not unreasonable fee to the medical attendants, it ensures to the working classes efficient medical attention, without which (inasmuch as about 72 per cent. of all pauperism results from sickness) a large number of them would become paupers. The medical attendants do not attend cases of sickness at 4*s.* per annum, but the number of sick that occur in a given number of healthy members for the sum total subscribed by the latter. And as the sickness averages 5 per cent., "A Grumbler" will find that the sum paid for each case attended per annum constitutes a by no means ignominious fee. The medical attendants therefore do not put on "the cloak of charity" for the base motives imputed to them by "A Grumbler," nor do they give their services in the manner described for the purpose of "starving a new man or of giving vent to their professional jealousy." Jealousy of whom? Of the new man? It would rather seem to be the jealousy or envy of the new man that has brought forth "A Grumbler." Is it their fault that the newcomer is at his wits' end "how to start a practice" without the aid of that class of persons styled by him the "ragged lot," whose shilling or two he nevertheless does not affect to despise? The idea that the old-established practitioner ought "to stand and deliver," on demand of any newcomer, one portion of his practice as a means of getting himself "eased" of the remainder, is a bit of new morality, so simple in conception that it is scarcely likely to be entertained in any mind but that of "A Grumbler." His accusations are simply without foundation; although ostensibly general, they are obviously intended to have a local application.—I have the honour to be, Sirs, your obedient servant, and not ashamed to subscribe myself,

G. R. NICHOLAS, M.D.
(One of the Promoters of the Wandsworth
Church-row, S.W., Feb. 13th, 1887. Medical Aid Society.)

A Medical Poet.—We do not think the suggestion could be usefully carried out. The troughs would not be likely to be employed by the careless class of persons referred to.

Mr. Leonard Keyser.—The reply to both questions must be in the affirmative.

NIGHTMARE.

To the Editors of THE LANCET.

SIRS,—I think if your correspondent, "M.D.," will take the following mixture the nightmare from which he suffers will give place to more peaceful sleep. When he has taken the mixture a fortnight it would be interesting to know the result. Personal experience has taught that great relief will follow:—℞. Pulv. rhei, gr. ii.; liq. ammon., ♏x.; sod. bicarb., gr. xii.; ol. menth. pip., ♏i.; aqua ʒi.; ter die. I am supposing "M.D." to have eliminated indigestible articles from his usual diet.

I am, Sirs, yours truly.
March, 1887. R. W. W.

To the Editors of THE LANCET.

SIRS,—In answer to "M.D.," I believe that any of the following may cause disturbance of sleep such as he describes:—supper, sexual excess, smoking, tea-drinking, over-reading, the last three especially if indulged in at night. Treatment:—Avoid the above. If possible, take a short holiday, and make a point of having out-door exercise.

I am, Sirs, faithfully yours,
March, 1887. G. R. S.

FURNEAUX JORDAN TESTIMONIAL FUND.

Final List.

Crompton, D. W., Esq.	...	£3	0	0	Jackson, Vincent, F.R.C.S.	£1	1	0
Parkes, Ed., M.D.	...	2	2	0	Lafarelle, J., Esq.	...	1	1	0
Boddy, E. M., Esq.	...	1	1	0	Messiter, A. F., Esq.	...	1	1	0
Chambers, W. R., Esq.	...	1	1	0	Moore, J. W., Esq.	...	1	1	0
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Freer, J. F., Esq.	...	...	1	1	0	Smith, Richard, Esq.	...	1	1	0
Hart, G. H., Esq.	...	...	1	1	0	Fuller, Andrew, Esq.	...	0	10	6
Hogg, Jenner, M.D.	...	1	1	0	Wright, Wm., M.D.	...	0	10	6

T. H. Bartleet, Treasurer; Bennett May and Jordan Lloyd, Secs.

Surgeon-Major.—We trust that our correspondent will feel reassured by the statement made by the Director-General, at the dinner of the Medical Society, which he will find reported in our present issue.

Cyclist.—We see no objection to the patient's riding the machine, providing a carefully applied and well-fitting truss is worn, and racing is forbidden.

Dr. Bennett (Leicester).—The criticism had, perhaps, better wait for publication until the whole of the paper has appeared.

PARALDEHYDE.

To the Editors of THE LANCET.

SIRS,—The great advantage possessed by paraldehyde over chloral is that it has no depressing or paralysing effect upon the heart. In all other respects it is almost indentical with chloral. If your correspondent, "Subscriber," will refer to THE LANCET of Jan. 31st, 1885, he will find a short paper written by me on the action of paraldehyde. I there stated that I had found the drug to be an equally sure hypnotic with chloral; that in the rare cases in which it did not produce sleep it never caused excitement; that it left no headache or other unpleasant after-symptom, and that it did not affect the appetite even when given regularly for a considerable time. During the two years that have passed since I wrote the paper alluded to I have regularly prescribed it, and have no reason to change the opinions there stated. It possesses every good quality of chloral and is without its most dangerous—viz., its paralysing action upon the heart. It may be given in doses of from forty to ninety minims with safety, even where the heart is weak and irregular, or, as in the second stage of febrile diseases, where the cardiac muscle has undergone fatty degeneration. In ordinary cases of insomnia forty minims are generally sufficient to induce sleep; and this dose repeated, if necessary, in fifteen minutes I have found more efficacious than a larger single dose. I may say I have discovered no better mode of administration than with a vegetable bitter in simple syrup.

I am, Sirs, yours faithfully.
March, 1887. S. A. K. STRAHAN, M.D.

MEDICAL ADVICE THROUGH NEWSPAPERS.

Mr. T. R. Allinson, L.R.C.P. Edin. & L.R.C.S. Edin., continues to give his advice with much profusion through a newspaper, accompanied with a little commercial advice to his correspondents, to recommend "his paper." Much of Mr. Allinson's advice is good enough. Some of it is very doubtful, as, for example, that to "Jimmy," who is afflicted with diabetes, and told to drink nothing but milk, which will stop his thirst. However, our object is not to discuss "Jimmy's" prospect with diabetes on a milk diet, but the newspaper method of advertising one's professional wisdom and the particulars of "Jimmy's" or "Jessie's" complaint.

JUBILEE SUGGESTIONS!

To the Editors of THE LANCET.

SIRS,—With a view of celebrating our Queen's Jubilee, and of accomplishing the wishes of various medical bodies of gaining higher professional and distinctive titles, will you allow me to suggest the following:—1. That all L.M.K.Q.C.P.I.'s should be allowed to add the *few* remaining letters of the alphabet to their names. 2. That as the examination of the Apothecaries' Hall now includes surgery, those holding that diploma should be considered eligible for the post of consulting surgeons to hospitals, and be allowed to use the title of professor. 3. That all members of the Colleges of Surgeons, and licentiates of the Colleges of Physicians in Great Britain, should have the right of using the title "M.D. Jubilee" after their names. 4. That all who hold the university title of M.D. at present should be made baronets, or at least life peers. 5. That all unqualified assistants of more than fifty years' standing, and who can prove that they have never entered the walls of a hospital except as patients, should be admitted at once upon the Medical Register and rank as Fellows of the College of Surgeons. If these suggestions be carried out in the spirit in which they are offered, the present dissensions would soon cease, and a time come when the highest and lowest medical titles will be as one, and the rivalry of the licensing bodies put a stop to altogether.

I am, Sirs, yours faithfully,
A. G. BATEMAN.
Constitutional Club, Northumberland-avenue, March, 1887.

A NEW GULLY FOR YARDS.

MR. SHAW, of Willington-on-Tyne, has sent us a drawing of a gully to be used in houses and yards. It is a great advance upon the old bell-trap, for the reason that it has in combination with it a syphon trap, which will effectually prevent the drain from becoming untrapped so long as water is supplied to it.

Dr. J. B. Sim (Nottingham).—Yes, shortly.

DENTAL STATISTICS.

ACCORDING to the *Dental Review* there is in America one dentist for every 4000 inhabitants; in France, one for every 37,000; in Germany, one in 88,000; and in Austro-Hungary, one in 200,000. In England there is one for every 7000.

G. A. M.—We doubt if our correspondent has any legal claim.

THE LONDON HOSPITAL STUDENTS' DINNER: A WAIL FROM THE WILDERNESS.

To the Editors of THE LANCET.

SIRS,—The other evening I attended the first annual dinner of the London Hospital students, where it was suggested that I should respond for the "The Visitors." Up till then I had fondly imagined myself a student of the hospital, having paid a composition fee, attended lectures, dissected several parts, and dressed in the hospital. My connexion with the school is briefly this: After taking an Edinburgh diploma I spent five or six years abroad and otherwise, and then came to town to read for the higher qualifications. Looking round for a hospital, I deliberately chose the "London" for its brilliant staff and fine clinique, and entered there, intending to go through such a course as would enable me in time to apply for a house-surgeoncy. Events prevented me from carrying out that intention, but I still considered myself a student of the hospital until there came the sudden awakening. Now, one is tempted to ask, with Truthful James, "Are things what they seem, or is visions about?" If the receipt before me from the warden for forty-five guineas, the first instalment of a composition fee, does not constitute one a student of the London Hospital, how is that enviable position to be attained? Evidently not by purchase, wherefore I thank heaven with mild philosophy that the second instalment has not been paid. Some months back I met a medical man, an old student of the London Hospital, and in answer to his inquiry explained my connexion with the place; whereupon he said: "Oh, you are one of those qualified men who go there for the appointments!" This remark showed a want of breeding or want of tact that inclined one to ignore and forget it as soon as possible; and the incident had passed out of my mind until recalled by the dinner. In ancient times death was often the penalty for those who strayed into sacred enclosures, and by comparison it is terrible to think what may be the sentence on composition students who have trespassed into these charmed circles. For my own part, I should be sorry to thrust myself into any society of men, however distinguished, were it made plain that my presence was not wanted, and I am willing formally to resign all claim to be called a student of the London Hospital. Not that this declaration is likely to fill either of the contending camps with great joy or despondency; but one cannot hear too many sides of a question. Besides, now that I have tasted the delights of suburban practice and am freed from scholastic thraldom many things appear in a different light. House-surgeoncies have lost the halo of glory that formerly surrounded them, for a small practice in the wilds has permitted perineal section, removal of deep-seated glands, osteotomy, and other operations denied to resident officers. Bearing these things in mind, the feeling gathers weight that a man of fair education, energy, and self-reliance, with the help of a few books of reference and thorough antiseptic methods, may live a happy and useful life (and even occasionally operate) independently of consultants, high degrees, hospital appointments, or connexion with particular schools. One comfort is that the fields of literature, science, and art are just as open to a humble licentiate as to one who writes a string of titles after his name.

In conclusion, the students of the London Hospital have my hearty wishes for success in efforts which seem to have a solid groundwork of justice, although this goodwill must sound rather strangely coming from one who has been put "outside the walls."

I am, Sirs, your obedient servant,

DAVID WALSH, L.R.C.S. and L.R.C.P. Ed.

Hammersmith, W., March, 1887.

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Prof. Ogston, Aberdeen; Dr. Mac Alister, Cambridge; Dr. Bantock, London; Mr. W. Whitehead, Manchester; Mr. Fitzroy Benham, London; Mr. Martin, London; Dr. Charteris, Glasgow; Mr. W. Curran, London; Mr. S. Snell, Sheffield; Dr. Drysdale, London; Mr. R. Cuff, Scarborough; Mr. Hasham, Birmingham; Dr. J. B. Mattison, Brooklyn; Mr. Richard Harris; Mr. Smither, London; Mr. Keyser, Slough; Messrs. Brady and Martin, Newcastle-on-Tyne; Mr. Meadows, Hastings; Dr. Beavan Rake, Port of Spain; Dr. Nicholas, Wandsworth; Messrs. Kent and Co., London; Mr. Prince, Sidcup; Mr. W. White; Mr. Kendle, South Molton; Mr. Manning, London; Mr. A. A. Bowlby; Messrs. Archer and Co., Liverpool; Dr. F. W. Bennett, Leicester; Messrs. McLachlan and Co. Edinburgh; Mrs. Hitch, St. Leonards-on-Sea; Dr. Spurgin, Maryport; Dr. Illingworth, Clayton-le-Moors; Dr. N. Y. Bowditch, Boston, U.S.; Dr. Rentoul, Liverpool; Dr. Strahan; Messrs. Beal and Son, Brighton; Mr. Vincent, Shouldham; Mr. Oliver; Mr. Mead, Bow; Mr. Birely, Portsea; Dr. Stuart, Leamington; Mr. Hughes, Pwllheli; Mr. Barraud, London; Mr. Fox, Birmingham; Mr. Davis, Detroit; Mr. Gurner, London; Mr. D. Walsh, London; Dr. Frederick Taylor, London; Dr. C. J. Parson, Whitchurch; Mr. A. G. Bateman, London; Mr. R. W. Thomas, London; Mr. Ballance, London; Mr. R. C. Baber, Brighton; Dr. Emmerson, Biggleswade; Mr. W. K. Haten, Bombay; Dr. Jones, Ilford; Mr. Paine, Worthing; Dr. Wilde, South Kensington; Mr. Holtby, York; Mr. Sharfin, Bedford; Messrs. Blake and Co., Leeds; Mr. Leighton, Cheltenham; Mr. Morton, Brighton; Dr. Ralfe, London; Mr. Davies, Llandrindod; Messrs. Burgess and Co., London; Mr. Joslen, Workington; Mr. McArdle; Mr. McAdam, Glasgow; Mr. Briscombe, Bolton; Mr. Green, Derby; Mr. Painter, Sandymount; Dr. Finch, Salisbury; Mr. Green, Hull; Mr. Ellow, Croydon; Dr. Diver, Kenley; Mr. Armstrong, Manchester; Mr. R. W. Parker, London; Mr. A. C. Preston, Lincoln, N.Z.; Mrs. Thompson, London; Mr. L. Hill, London; Mr. Smith, Easingwold; Mr. G. R. Turner, London; Mr. T. McC.; Puzzled; A Medical Poet; Retired Brigade-Surgeon; A Reader; Surgeon-Major; M.K.Q.C.P.I.; Whole Meal; Secretary, Glasgow; Aorta, Edinburgh; M.B. & C.M. Aberd.; Yankee.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Williams, Truro; Mr. Martin, Purton; Mr. Morton, Sheffield; Mr. Murchison, Hull; Mr. Aveling, Paddington; Dr. Stuart, Wigan; Mr. Mackenzie, Templeville; Mr. Sacker, Dulwich; Mrs. Wastnage; Mr. Taburner, Wigan; Mr. Brown, Tredegar; Dr. Swinson, Baldock; Mr. Jeffreys, Chesterfield; Mr. Kalkuhl, Obercassel; Mr. Davis; Mr. Cooper, Great Bradley; Mr. Mills, Glasgow; Mr. Swain, Manchester; Dr. Taylor, Newcastleton; Miss Birmingham, Bromley; Mr. Parker, London; Mr. Syree, Northallerton; Mr. Harries, Barnsley; Dr. Partington, Manchester; Mr. Hendry, Eastbourne; Dr. McLean, Harpenden; Mr. Harris, Liverpool; Mr. Clay, Edinburgh; Messrs. Porteous and Co., Glasgow; Mr. Cocking, Plymouth; Mrs. Saunders, Tunbridge Wells; Dr. Phillips, Egham; Mrs. Martin, Hastings; Dr. Guy, West Cowes; Mr. Davis, Bewdley; Mr. Brooks, Ludlow; Mr. De Lisle, New Zealand; Mr. Rideal, London; C. J.; Gratz; Dr. F., Shepherd's-bush; L. M.; Medicus, Liskeard; C. D., Tunstall; Thesis; Surgeon, Brierley Hill; Delta, London; M.B., London; A. C., Cardiff; J. R. W., Manchester; M.D., Crewe; T. W. H., Southport; Salopian; C. S.; T. S., London; R. L. S., Hollingwood; Yorkshire; J. B. Peckham; Statim.

Leeds Mercury, Scotsman, West Cumberland Times, Bradford Observer, Western Morning News, Hawick Express, Richmond and Twickenham Times, Haslingden and Rossendale Gazette, Liverpool Daily Post, York Herald, Birkenhead News, Portsmouth Times, Hospital Gazette, &c., have been received.

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